U. S. Environmental Protection Agency
Public Water System Supervision Program

Final Report
Data Verification Review

Michigan Department of Environmental Quality
Water Bureau

Prepared by The Cadmus Group, Inc.
for
The Environmental Protection Agency
Office of Ground Water & Drinking Water
April 17, 2006

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EXECUTIVE SUMMARY

I. Introduction

During the week of October 3, 2005, the "team," consisting of representatives of Region 5 of the Environmental Protection Agency (EPA), Jennifer Crooks and Alicia Brown, and representatives of The Cadmus Group, Inc., Jennifer "Jeffe" Kennedy, Laurie Potter, Claire Willscher, Valerie Meiers and Kim Clemente conducted a data verification (DV) in the Michigan Department of Environmental Quality (MDEQ) Bureau of Water. The team reviewed the files of a number of randomly selected public water systems (PWSs) maintained by MDEQ and Michigan's local health departments. The team reviewed community water systems (CWSs) overseen by the Community Drinking Water Unit (CDW), as well as nontransient noncommunity water systems (NTNCWSs) and transient noncommunity water systems (TNCWSs) maintained by the local health departments with oversight by MDEQ's Noncommunity Drinking Water Unit (NDW). This report documents the findings of the review.

A. State Offices

The MDEQ central office is in Lansing. The CDW is divided into eight district offices: Bay City, Lansing, Jackson, Southeast, Upper Peninsula, Cadillac, Grand Rapids and Kalamazoo. In addition, until the beginning of October, 2005, all mobile home parks were handled by a separate program, in the Lansing offices. The NDW oversees 43 local health departments (LHDs) which oversee 83 counties. Each district office or LHD performs all compliance determination, conducts sanitary surveys and maintains contact with PWSs, with oversight from the central office.

B. Description of Sample

Table 1 identifies the Federal Safe Drinking Water Information System (SDWIS/Fed) inventory for MDEQ and the number of systems in the stratified, random sample reviewed by the team. The CWS sample represents a 95-percent confidence level, with an error tolerance level of 7 percent. The noncommunity water system (NCWS) sample represents a 90-percent confidence level, with an error tolerance level of 10 percent.

Table 1: Number of PWSs in SDWIS/Fed, MDEQ Inventory, and Number Reviewed by the Data Verification Team

	Number of CWSs	Number of NTNCWSs	Number of TNCWSs
SDWIS/Fed Inventory[1]	1,436	1,610	8,808
Michigan Inventory	1,444	1,605	8,802
Systems in Sample	(36 total)	20	12
Small System	22		
Medium System	6		
Large System	8		
Very Large System	0		
Number Reviewed	(36 total)	20	12
Small System	22		
Medium System	6		
Large System	8		
Very Large System	0		

[1]SDWIS/Fed inventory as of 8/29/05. Michigan inventory as of 10/6/05.

Small: < 3,300
Medium: 9,999 - 3,300
Large: 999,000 - 10,000
Very large: > 1,000,000

C. Description of Review

The team reviewed MDEQ's system files, the State Safe Drinking Water Information System (SDWIS/State) database, and the online WaterTrack database for noncommunity water systems for updates to inventory and compliance data for the Consumer Confidence Reports Rule (CCR), Total Coliform Rule (TCR), Lead and Copper Rule (LCR), Phase II/V Rules, Surface Water Treatment Rule (SWTR), Interim Enhanced SWTR (IESWTR), Radionuclides Rule, Stage 1 Disinfection By-Products Rule (Stage 1 DBPR), Filter Backwash Recycling Rule (FBRR) and the Public Notification (PN) Rule. The Cadillac, Grand Rapids and Kalamazoo district offices were reviewed on-site by a traveling team consisting of Jennifer Crooks, Valerie Meiers and Kim Clemente. The Bay City, Jackson, Southeast and Upper Peninsula district offices hand carried or shipped files to the central office in Lansing, where the Lansing district office was also located, for review by Alicia Brown, Jeffe Kennedy, Laurie Potter and Claire Willscher. The period of review for the regulations is shown in Table 2.

II. Findings

Below are the findings of the DV team. We will discuss any implementation policies specific to the state, the greatest strengths of the state's drinking water program, and the areas most needing improvement, as related to the major discrepancies identified. Tables 3A - 3G numerically summarize the discrepancies detected for each system type.

Table 2: Periods of Review

Category	Date
Inventory	Most recent
CCR	Year 2003, due 2004
Sanitary Survey	2 most recent surveys
Total Coliform Rule	Jul 1, 2004 - Jun 30, 2005
Lead & Copper Rule	2 most recent samples
Phase II/V (except nitrate)	2002-2004
Nitrate	2003, 2004
Stage 1 DBPR	Jul 1, 2004 - Jun 30, 2005
Radionuclides	2 most recent samples
SWTR	Jul 1, 2004 - Jun 30, 2005
IESWTR	Jul 1, 2004 - Jun 30, 2005
FBRR	Jan 1, 2004 - Dec 31, 2004
Public Notice	Per related violation

Implementation of Regulations in Michigan

Michigan has primacy or has submitted primacy applications for all rules reviewed by the team. The state is continuing dialogue with US EPA Region 5 regarding requirements of the LCR Minor Revisions (LCRMR). Michigan does not currently have the legal authority to enforce the requirement that all NTNCWSs collect five samples (see Appendix F, a letter from the Michigan Attorney General). However, through a Primacy Extension Agreement dated March 2002 the state agreed to notify EPA Region 5 of any instance where a system failed to collect the required number of samples (see Appendix G, Primacy Extension Agreement between Michigan and EPA Region 5). The DV revealed that 12 of the 20 NTNCWSs that were reviewed did not collect the federally required number of samples, and that the state had not notified EPA Region 5 of this occurrence. While the team acknowledges that the state is not legally permitted to enforce the five-sample requirement, it should have identified the system's monitoring performance and notified EPA Region 5 that the federal requirement was not met – as agreed to in the Primacy Extension Agreement. As a result, the 12 instances are treated as data flow discrepancies (errors) in this report, in that the state did not provide required data to EPA.

Michigan has statewide waivers for dioxin, 1,2-Dibromomethane (EDB), 1,2-Dibromo-3-chloropropane (DBCP), di(ethylhexl)adipate, di(ethylhexyl)phthalate, diquat, endothall, glyphosate, polycyclic aromatic hydrocarbons (PAHs) dioxin and dalapon. MDEQ also implements a chemical waiver program by source that allows for reduced monitoring for inorganic chemicals (IOCs), volatile organic compounds (VOCs) and synthetic organic chemicals (SOCs).

MDEQ does not report sanitary survey violations to SDWIS/Fed because the state or LHDs schedule and conduct the surveys.

US EPA Region 5 provided guidance to its states in response to the March 2002 radionuclide rule reporting guidance. The region identified problems with the accurate reflection of radionuclide maximum contaminant levels (MCLs) in SDWIS/Fed. The regional guidance, dated December 2, 2004 (Appendix E) allowed alternative reporting of radiological MCL violations by only requiring an MCL violation to be reported once, which could remain open until the system was returned to compliance. This was intended to reduce the states' burden of reporting each quarterly violation to SDWIS/Fed.

In addition US EPA Region 5 approved alternate "trigger levels" for SOCs that are higher than the detection limits set by US EPA Headquarters and higher than the upper confidence limits approved in the 1993 US EPA Headquarters memo. See Appendix E for this approval. US EPA Region 5 intends to revise these alternate trigger levels; however, this revision has been delayed.

Strengths of Program

MDEQ boasts a complex program that oversees nearly 12,000 PWSs. Michigan has made a heavily decentralized system work for them, delegating responsibility for the more than 10,000 noncommunity systems to local health departments.

Michigan has a thorough program to organize monitoring throughout their many systems. Systems are assigned a specific year within the 3-year compliance period in which to monitor, sometimes even a specific date. MDEQ also has a sodium monitoring requirement. CWSs are required to have sanitary surveys every 3 years, except manufactured housing communities, which have a 5-year frequency.

The team noted that sanitary surveys were unusually thorough and well completed. Information for service connections, sources and entry points were well documented.

Hard copy files examined were complete, well organized and often contained relevant information such as news articles regarding the water system. Sampling of stand-by and emergency wells appears to be standard practice. Michigan also began Phase II/V monitoring in 1988, well before the onset of the rule.

LCR information was extremely complete, showing excellent documentation of tiers and sampling sites. Reporting forms also indicated maximum and minimum sample values as well as the 90th percentiles.

Stage 1 DBPR monitoring plans were also very well done. The team noted that the Jackson District Office did particularly well in reducing monitoring for a system, then increasing monitoring when warranted.

Areas Needing Improvement

Some systems, especially noncommunities, are not receiving sanitary surveys at the required frequency and violations for these have not been assigned or reported to SDWIS/Fed.

Occasionally district offices are allowing 10-day grace periods for late CCRs or forgiving lapses. The CCR Rule does not allow for a grace period and violations should be assigned and reported to SDWIS/Fed in these circumstances.

As an overall point for sampling, sources of the samples were not always well identified on analytical results, especially when multiple sources were involved. Some systems or laboratories appeared to use multiple synonyms for the same sources or entry points. This was noted especially in the East Bay City District Office, the Gwinn District Office and for mobile home parks.

The team noted a few TCR compliance issues:

- MDEQ should ensure that all systems report TCR analytical results on time each month and that violations are reported to SDWIS/Fed when they fail to do so.
- MDEQ should ensure that systems collect sufficient repeat and routine samples following a total coliform-positive result.
- MDEQ should ensure that TCR MCL violations are assigned by the county health departments when warranted.

The team noted a few Phase II/V compliance issues:

- In the event of a detect, MDEQ should ensure that quarterly sampling is conducted to determine whether the contaminant is reliably and consistently (R&C) below the MCL, even if other causes for the detections are suspected.
- Systems that do not monitor according to schedule should receive monitoring and reporting (M/R) violations.

MDEQ should ensure that systems are meeting the disinfectant residual reporting requirements for Stage 1 DBPR. Within 10 days of the end of each month, systems are required to report to the state the monthly average of all samples taken in each month for the last 12 months, the average of all monthly averages for the last 12 months, and whether this average exceeds the minimum residual disinfectant level (MRDL) of 4.0 mg/L. Alternatively, the state may calculate the averages for systems.

The team noted several LCR compliance issues for MDEQ:

- MDEQ should ensure that all action-level exceedances (ALEs) and lead 90th percentile results for systems serving more than 3,300 customers are reported to SDWIS/Fed as sample results.

- MDEQ should ensure that systems sample in the summer months of June through September or receive a violation. Alternately, another 4-month compliance period could be assigned to the systems.
  MDEQ and US EPA Region 5 respond that based on analytical results we have reviewed and information received from national lead experts, Region 5 does not believe that samples taken outside of the June-September months produce lower risk lead conditions. Region 5 has requested that U.S. EPA Headquarters eliminate the 4-month reduced monitoring period. Region 5 and MDEQ agree that ensuring the collection of LCR compliance samples during the June-September time frame is a low priority action item

- MDEQ should assign and report violations when PWSs fail to collect triennial samples on time.

- MDEQ should ensure that PWSs collect enough tap samples based on population served and that violations are reported to SDWIS/Fed for all systems that fail to do so.

- Systems that take fewer samples than required by their population or that report sample results late, should be assigned violations.

The DV team hopes that the findings and recommendations outlined in this report will be of use to MDEQ in improving data reporting and tracking methods.

Table 3A: Inventory Data

Type of Reporting Discrepancy	Community Water Systems		Nontransient Noncommunity Water Systems		Transient Noncommunity Water Systems	
	Number of Systems Reviewed	Number of Systems With Discrepancies	Number of Systems Reviewed	Number of Systems With Discrepancies	Number of Systems Reviewed	Number of Systems With Discrepancies
Wrong PWSID	36	0	20	0	12	0
System type not in agreement with SDWIS/Fed	36	0	20	0	12	0
System status not in agreement with SDWIS/Fed *(active/inactive)*	36	0	20	0	12	0
System activity status not in agreement with SDWIS/Fed *(current/historical)*	36	0	20	0	12	0
System source type not in agreement with SDWIS/Fed *(SW, SWP, GU, GUP, GW, GWP)*	36	0	20	0	12	0
Inaccurate population *(state records and SDWIS/Fed not within 10%)*	36	2	20	0	12	0
Inaccurate service connections *(state records and SDWIS/Fed not within 10%)*	36	0	20	0	12	0
Wrong or missing name of administrative contact in SDWIS/Fed	36	0	20	0	12	0
Wrong or missing address of administrative contact in SDWIS/Fed	36	1	20	3	12	0

Table 3B: CWS Discrepancies - Monitoring and Reporting

		Violation Statistics				Discrepancies			
	A	B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Sanitary Survey	36	3	3	0	0	3	0	0	3
Consumer Confidence Reports (CCR)	36	3	3	1	0	2	1	0	3
Total Coliform Rule (TCR)	36	2	6	1	0	5	1	0	6
Nitrate/Nitrite	29	1	1	1	1	0	0	0	0
Inorganic Chemicals (IOCs)	29	0	0	0	0	0	0	0	0
Volatile Organic Compounds (VOCs)	29	1	2	0	0	2	0	0	2
Synthetic Organic Chemicals (SOCs)	29	1	1	0	0	1	0	0	1
Filter Backwash Recycling Rule (FBRR)	1	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (DBPR)	10	6	18	0	0	18	0	0	18
Radiologicals	29	1	0	0	0	0	0	1	1
Lead and Copper Rule (LCR)	36	14	17	13	7	4	6	0	10
Surface Water Treatment Rule (SWTR)	0	0	0	0	0	0	0	0	0
Interim Enhanced SWTR (IESWTR)	1	1	1	0	0	1	0	0	1
Public Notification (PN)	36	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations
Column F: The number of determinations that EPA believes the state should have made that it did not make
Column G: The number of determinations that the state did make that did not appear in the federal database
Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

Table 3C: CWS Discrepancies - Maximum Contaminant Level and Treatment Techniques

		Violation Statistics				Discrepancies			
	A	B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Total Coliform Rule (TCR)	36	1	1	1	1	0	0	0	0
Nitrate/Nitrite	29	0	0	0	0	0	0	0	0
Inorganic Chemicals (IOCs)	29	0	0	0	0	0	0	0	0
Volatile Organic Compounds (VOCs)	29	0	0	0	0	0	0	0	0
Synthetic Organic Chemicals (SOCs)	29	0	0	0	0	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (DBPR)	10	0	0	0	0	0	0	0	0
Radiologicals	29	1	1	1	1	0	0	0	0
Lead and Copper Rule (LCR)	36	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	0	0	0	0	0	0	0	0	0
Interim Enhanced SWTR (IESWTR)	0	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations
Column F: The number of determinations that EPA believes the state should have made that it did not make
Column G: The number of determinations that the state did make that did not appear in the federal database
Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

Table 3D: NTNCWS Discrepancies - Monitoring and Reporting

		Violation Statistics				Discrepancies			
	A	B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Sanitary Survey	20	3	3	0	0	3	0	0	3
Total Coliform Rule (TCR)	20	1	2	0	0	2	0	0	2
Nitrate/Nitrite	20	1	1	0	0	1	0	0	1
Inorganic Chemicals (IOCs)	20	1	1	1	1	0	0	0	0
Volatile Organic Compounds (VOCs)	20	1	1	1	1	0	0	0	0
Synthetic Organic Chemicals (SOCs)	20	1	1	1	1	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (DBPR)	0	0	0	0	0	0	0	0	0
Lead and Copper Rule (LCR)	20	17	17	2	1	4	12	0	16
Surface Water Treatment Rule (SWTR)	0	0	0	0	0	0	0	0	0
Public Notification (PN)	20	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations
Column F: The number of determinations that EPA believes the state should have made that it did not make
Column G: The number of determinations that the state did make that did not appear in the federal database
Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

Table 3E: NTNCWS Discrepancies - Maximum Contaminant Level and Treatment Techniques

		Violation Statistics				Discrepancies			
	A	B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Total Coliform Rule (TCR)	20	2	3	2	1	1	1	0	2
Nitrate/Nitrite	20	0	0	0	0	0	0	0	0
Inorganic Chemicals (IOCs)	20	0	0	0	0	0	0	0	0
Volatile Organic Compounds (VOCs)	20	0	0	0	0	0	0	0	0
Synthetic Organic Chemicals (SOCs)	20	0	0	0	0	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (DBPR)	0	0	0	0	0	0	0	0	0
Lead and Copper Rule (LCR)	20	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	0	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations
Column F: The number of determinations that EPA believes the state should have made that it did not make
Column G: The number of determinations that the state did make that did not appear in the federal database
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Table 3F: TNCWS Discrepancies - Monitoring and Reporting

		Violation Statistics				Discrepancies			
	A	B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Sanitary Survey	12	4	4	0	0	4	0	0	4
Total Coliform Rule (TCR)	12	1	3	2	1	1	1	0	2
Nitrate/Nitrite	12	2	3	2	2	1	0	0	1
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (DBPR)	0	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	0	0	0	0	0	0	0	0	0
Public Notification (PN)	12	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations
Column F: The number of determinations that EPA believes the state should have made that it did not make
Column G: The number of determinations that the state did make that did not appear in the federal database
Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

Table 3G: TNCWS Discrepancies - Maximum Contaminant Level and Treatment Techniques

		Violation Statistics				Discrepancies			
	A	B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Total Coliform Rule (TCR)	12	0	0	0	0	0	0	0	0
Nitrate/Nitrite	12	0	0	0	0	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (DBPR)	0	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	0	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations
Column F: The number of determinations that EPA believes the state should have made that it did not make
Column G: The number of determinations that the state did make that did not appear in the federal database
Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

I. Introduction

During the week of October 3, 2005, the "team," consisting of representatives of Region 5 of the Environmental Protection Agency (EPA), Jennifer Crooks and Alicia Brown, and representatives of The Cadmus Group, Inc., Jennifer "Jeffe" Kennedy, Laurie Potter, Claire Willscher, Valerie Meiers and Kim Clemente conducted a data verification (DV) in the Michigan Department of Environmental Quality (MDEQ) Bureau of Water. The team reviewed the files of a number of randomly selected public water systems (PWSs) maintained by MDEQ and Michigan's local health departments. The team reviewed community water systems (CWSs) overseen by the Community Drinking Water Unit (CDW), as well as nontransient noncommunity water systems (NTNCWSs) and transient noncommunity water systems (TNCWSs) maintained by the local health departments (LHDs) with oversight by MDEQ's Noncommunity Drinking Water Unit (NDW). This report documents the findings of the review.

The MDEQ central office is in Lansing. The CDW is divided into eight district offices: Bay City, Lansing, Jackson, Southeast, Upper Peninsula, Cadillac, Grand Rapids and Kalamazoo. In addition, until the beginning of October, 2005, all mobile home parks were handled by a separate program in the Lansing offices. The NDW oversees 83 LHDs. Each district office, program or LHD performs all compliance determination, conducts sanitary surveys and maintains contact with PWSs, with oversight from the central office.

The DV had two objectives. The first was to detect any discrepancies between the PWS data in Michigan's files and databases and the data reported to the Federal Safe Drinking Water Information System (SDWIS/Fed) regarding inventory, violations, and milestones (if applicable) for the Consumer Confidence Reports Rule (CCR), Total Coliform Rule (TCR), Lead and Copper Rule (LCR), Phase II/V Rules, Surface Water Treatment Rule (SWTR), Interim Enhanced SWTR (IESWTR), Radionuclides Rule, Stage 1 Disinfectants and Disinfection By-Products Rule (Stage 1 DBPR), Filter Backwash Recycling Rule (FBRR), and the Public Notification (PN) Rule. The team used the standard SDWIS/Fed 35 reports to detect these discrepancies. The second objective was to ensure that MDEQ is determining compliance in accordance with federal and state primacy regulations.

The outcome of the DV is an itemization of discrepancies, calculated by system type (i.e., CWS, NTNCWS, and TNCWS) and by regulation. The team totals the number of violations incurred by the systems during the period of review and then determines the number of these violations, and any other discrepancies, that were not reported to SDWIS/Fed.

There are two types of discrepancies: data flow discrepancies and compliance determination discrepancies. Data flow discrepancies are violations of National Primary Drinking Water Regulations that are detected by the program, but are not posted to SDWIS/Fed. Team members know that the program detected the violation when they find correspondence with the system, enforcement actions, or violations in the State Safe Drinking Water Information System (SDWIS/State), the state's database, or system files. Data flow discrepancies also occur

when the state incorrectly reports a violation to SDWIS/Fed, such as by incorrectly coding a violation. Compliance determination discrepancies occur when the program does not detect a violation or reports a violation to SDWIS/Fed that is not substantiated by information in the program files or database.

Appendix A lists the systems selected for review. Appendix B lists the types of discrepancies identified by the team and the definitions of the discrepancies. Tables 3A - 3G in the executive summary summarize the number and type of discrepancies for CWSs, NTNCWSs, and TNCWSs. Appendix C provides system-specific lists of each discrepancy organized by rule. Appendix D provides the MDEQ Monitoring Waiver Information. Appendix E contains memos from US EPA Region 5 approving alternative monitoring and reporting practices. Appendix F contains a letter from Michigan's attorney general on the LCR. Appendix G contains the primacy extension agreement between Michigan and EPA Region 5.

II. Description of the Sample

The number of systems reviewed was based on the total inventory of systems in SDWIS/Fed as of August 29, 2005. That inventory consisted of 1,436 active CWSs, 1,610 active NTNCWSs, and 8,808 active TNCWSs. From that inventory, 36 CWSs, 20 NTNCWSs, and 12 TNCWSs were randomly selected for review. This sample size was based on a targeted confidence level of 95 percent with an error tolerance level of 7 percent for CWSs and 90 percent with an error tolerance level of 10 percent for NTNCWSs and TNCWSs. A detailed description of the sampling methodology can be found in Chapter 3 of the *EPA Protocol for Participation in a PWSS Program Data Verification*, available from The Cadmus Group, Inc.

III. State Data Flow

Describing the flow of information from the point of sample collection to the submission of violations, enforcement actions, and milestones to SDWIS/Fed sometimes illustrates problems states face in managing their large data sets. The chain of custody for samples is explained below, as are the methods used by MDEQ to store information and calculate compliance.

System Files. The district offices and LHDs maintain hard copy files of analytical results, inventory, enforcement, correspondence, source water assessments, SWTR evaluations, site sampling plans, and PN. Inventory information is included on sanitary surveys and stored electronically in SDWIS/State and WaterTrack. SDWIS/State has been networked statewide and WaterTrack is networked through the LHDs.

The district offices provided well organized files. Most everything was organized in date order, and easy to locate. WaterTrack proved to be a nearly comprehensive representation of information from the LHDs' jurisdiction over the noncommunity systems.

Sample Collection and Analysis. All samples are collected by the systems. Some PWSs deliver samples to the laboratories by hand, but most are sent by the US Postal Service or the United Parcel Service.

Approximately 95 percent of all chemical samples are analyzed by the MDEQ state laboratory in Lansing. That laboratory also analyzes about half of the LCR and TCR samples. The other half are analyzed by smaller commercial laboratories. Some larger communities and some LHDs have their own laboratories. Systems farther away from Lansing are less likely to use the state laboratory.

The state laboratory sends hard copy analytical results to the district offices for CWSs and to the LHDs for noncommunities, usually as PDF files, which are then printed out and manually entered into SDWIS/State or WaterTrack. Commercial laboratories provide the results to their client systems, which then send hard copies to the district offices or LHDs. These data may be delivered electronically in the future.

Data Storage and Compliance Determination. The district offices retain hard copies of analytical results for all rules for CWSs. Some data are also entered into SDWIS/State. The LHDs in each county retain hard copy files and also enter all data into WaterTrack, their common database, overseen by the MDEQ Central Office in Lansing.

The laboratories are required to notify systems of a positive total coliform sample in a timely manner. Michigan state law places the burden of action on the system and requires the system to inform their district office or LHD. If fecal coliform or *E. coli* are present, the state laboratory must call the district office, following a prescribed phone tree.

Phase II/V compliance is determined through SDWIS/State or WaterTrack, after data have been entered. Also, district office personnel may use Excel or other Access tables to allow them to track compliance and violations. District offices are manually generating violation letters, rather than using SDWIS/State.

SDWIS/Fed Submittals. Data are reported to SDWIS/Fed by system. Current actions and inventory are updated quarterly using the total replace method. Lead sample values are reported less frequently. MDEQ uploads to SDWIS/Fed via data transfer files to the central data exchange from SDWIS/State for CWSs and from WaterTrack for NCWSs. MDEQ does not typically encounter problems submitting data to SDWIS/Fed. They have successfully sent data to the SDWIS Operational Data System (SDWIS/ODS) using Extensible Markup Language (XML).

IV. Inventory Data

A. Scope of Inventory Data Reviewed

Inventory information about each PWS regulated by the state is required to be reported to EPA. This required inventory information is collectively referred to as the "Inventory Core Data Set." The Inventory Core Data Set is divided into three primary groups:

- **Registration** - data elements necessary for a system to become registered in, or added to, the federal database. Failure to provide these data elements will result in the water system being rejected for inclusion in the federal database.

- **Grant Eligibility** - data elements that must be present for a registered system to be counted in the state's water system inventory when EPA calculates the state's PWSS formula grant allotment. Failure to provide these data elements will result in the water system not being included in the inventory that is used to calculate the state PWSS grant allotments.

- **Grant Withholding (Avoidance)** - EPA Regional Offices may use the absence of reporting of these data elements to withhold a portion of the state's PWSS formula grant allotment. *(Absence of reporting of these data elements will not, however, be used in calculating the state's formula PWSS grant allotment.)*

The review upon which this data verification report is based did not look at every data element in the Inventory Core Data set. Instead, the review focused on these nine elements:

- PWS ID Number
- PWS Type *(i.e., Community; Nontransient Noncommunity; or Transient Noncommunity)*
- PWS Activity Status *(i.e., Active or Inactive)*
- System Status *(i.e., Current or Historical)*
- PWS Source Type *(i.e., Ground Water; Purchased Ground Water; Surface Water; Purchased Surface Water; Groundwater Under the Direct Influence of Surface Water; or Purchased Groundwater Under the Direct Influence of Surface Water)*
- Population Served by the PWS
- Number of Retail Service Connections
- Administrative Contact/Responsible Party
- Address of Administrative Contact/Responsible Party

For each water system in the sample, the review team compared the information in the state's files, or data system, to the information in the federal data system. Whenever there was an inconsistency in the information the difference is noted. For most of the data elements reviewed,

the information is expected to be in complete agreement (e.g., the ID number must agree, the system type must agree), or a data discrepancy is recorded for that data element. For population and service connections, however, the data element is not considered to be a data discrepancy unless the difference between the information in the state records and federal data system is greater than 10 percent.

B. State Inventory Reporting Process

MDEQ's inventory information for CWSs is maintained in SDWIS/State and in the central and district office files. Inventory for noncommunities is maintained by the LHDs and stored in hard copy files and in the WaterTrack database. The primary source for inventory information is the sanitary surveys. Data are updated as received. Population and service connection information come from the PWS or census data. Annual fees are based on population.

C. Inventory Discrepancies

The DV team compared the information in the most recent sanitary surveys in the files kept by the district offices and occasionally in SDWIS/State to the information in SDWIS/Fed for 36 CWSs and in WaterTrack for 20 NTNCWSs, and 12 TNCWSs for the 9 data elements listed in *Subsection A,* above.

Only six discrepancies were identified, two for populations and four for administrative contact (AC) addresses that had not been updated in SDWIS/Fed. In all cases, the populations or addresses had been updated on sanitary surveys, but not corrected in SDWIS/State.

The team did note, however, that for 17 of the 68 systems covered in this review, the AC name field in SDWIS/Fed contained an entry other than a person's name. For example, the entries were a management company or an organization position title. While the Office of Ground Water and Drinking Water's (OGWDW) current policy is that the AC name field contain the name of a person, we are aware that there is some disagreement with that policy, within and outside of EPA. Many regulators have found that correspondence to systems that have a person's name in the AC name field, especially at noncommunity systems, is often returned to the state as undeliverable because of the frequent turnover of owners or operators. In such cases, letters containing compliance schedules or important information pertaining to public health are not received by the responsible individuals at the public water system who would need to take action on the letter. As a result of the concerns, the Drinking Water Program's Data Sharing Committee (DSC) is currently reevaluating the policy. It should be noted that this review did not count the 17 cases cited above as data discrepancies. The review did, however, expect that the AC name field in SDWIS/Fed be populated, and that the entity entered in SDWIS/Fed be in agreement with that identified in the state's records. Any instances where the field was not populated at all, or the entities did not agree, would have been counted as discrepancies.

A summary of the inventory data findings is contained in Table 3A of the Executive

Summary. The individual discrepancy findings are contained in Exhibits 1 and 2 of Appendix C.

D. General Statistics on Reporting the Inventory Core Data Set

For each system included in this review, this report presents general statistics on all of the data elements in the Inventory Core Data Set for all of the water systems in the state's inventory. The statistics were not compiled on-site during the review, but were obtained from a standard SDWIS/Fed Report (SDWRPT32) that was retrieved from the federal database shortly before the on-site review. Presented below is a table that lists:

- The number of the active systems which are also current.
- The number (and percent) of the current, active systems for which the state has reported all of the Registration and Grant Eligibility data elements.
- The number (and percent) of the current, active systems for which the state has reported all of the data elements required for Registration, Grant Eligibility, and avoidance of potential Grant Withholding).

Table 4. State-wide Statistics on the Inventory Core Data Set

System Type	**Active & Current** Systems	Active, Current Systems That Are **Grant Eligible**		Systems for Which All **Grant Withholding Data** Has Been Reported	
		Systems	Percent	Systems	Percent
CWSs	1,436	1,436	100.0%	515	35.9%
NTNCWSs	1,610	1,610	100.0%	742	46.1%
TNCWSs	8,808	8,808	100.0%	8,805	100.0%
Total	11,854	11,854	100.0%	10,062	84.9%

When this report was produced from SDWIS/Fed (on August 29, 2005) all of the state's systems were grant eligible. Overall, the required reporting for the Inventory Core Data Set was present on 100 percent of the systems. Conversely, 1,792 systems (15.1 percent) were missing at least one data element that is required to avoid potential grant withholding. The most common data element omission was for missing source treatment flag.

Recommendations

- Populations updated during sanitary surveys should be updated in SDWIS/Fed.
- AC addresses should be updated in SDWIS/Fed when they change.

- MDEQ should ensure that the grant withholding information, especially source treatment flags, are updated as soon as possible in SDWIS/Fed.

  MDEQ responds: MDEQ has committed to work on correcting the source treatment flag data element in SDWIS/Fed during FY 2006, which is documented in the state's FY 2006 Annual Resource Deployment Plan under the PWSS program.

V. Sanitary Surveys

A. State Sanitary Survey Program Summary

Sanitary surveys are performed by the district offices and LHDs. MDEQ's internal sanitary survey goals are once every 3 years for communities and once every 5 years for mobile home parks and noncommunities. MDEQ indicated they are not yet quite meeting the goal of once every 5 years for the noncommunities.

B. Sanitary Survey Discrepancies

The team checked to see whether an initial sanitary survey was conducted by the required date and whether subsequent surveys were performed at least every 5 years. One discrepancy was identified for one Kalamazoo District Office community, two mobile home parks, two NTNCWSs and four TNCWSs that received sanitary surveys more than 5 years apart. The remaining discrepancy was for an NTNCWS that was new in June 1999, but did not receive a sanitary survey until 2002. Sanitary surveys were first due for NTNCWSs by June 29, 1999, and every 5 years thereafter, according to the TCR.

Summaries of the sanitary survey findings are in Tables 3B, 3D, and 3F of the Executive Summary. The system-specific discrepancy findings are in Exhibit 3 of Appendix C.

Recommendations

- MDEQ should ensure that sanitary surveys are conducted at the required frequency and should report violations to SDWIS/Fed when surveys are conducted more than 5 years apart.

VI. Consumer Confidence Reports

A. State Consumer Confidence Report Program Summary

The MDEQ district offices receive and date CCRs and certifications, check them for completeness, and issue violations for late CCR certification.

B. Consumer Confidence Report Discrepancies

The team checked to see whether CCRs for 2003 were sent to consumers by July 1, 2004 and whether MDEQ had received certification by October 1, 2004. Three discrepancies were identified for CCR, one for data flow. In the Gwinn District Office, a CCR certification was submitted late and because the PWS was training a new operator, the district office forgave the lapse. The team felt, to comply with the letter of the law, a violation should have been assigned. In the Bay City District Office, one discrepancy was identified for a system that certified the CCR late. The district office allowed a 10-day grace period, but this grace period is not allowed by the rule.

A summary of the CCR violations and discrepancies for the systems that were reviewed is in Table 3B of the Executive Summary. See Exhibit 4 in Appendix C for a list of CCR discrepancies.

Recommendations

- Systems that deliver or certify CCRs late should receive violations.
- MDEQ should ensure that all violations they assign are reported to SDWIS/Fed.

VII. Total Coliform Rule

A. TCR Reporting Process

TCR data flow and compliance determination were described in Section III. MDEQ requires PWSs to collect repeat samples within 24 hours of receiving a coliform-positive result, though systems do not always meet this timeline. MDEQ requires a minimum of five routine TCR samples in the month following a positive result, unless a site visit is conducted. TCR samples are usually not invalidated, unless the laboratory invalidates samples in writing.

B. TCR Discrepancies

The DV team reviewed hard copy lab slips and SDWIS/State for TCR data collected from July 1, 2004 through June 30, 2005 for 36 CWSs. The WaterTrack database was reviewed for 20 NTNCWSs, and 12 TNCWSs.

Twelve discrepancies were identified — three for data flow. Of the nine compliance determination discrepancies, five were for one mobile home park that submitted results more than 10 days after the end of the compliance period, but did not receive reporting violations. The remaining four discrepancies were all for noncommunities. One system was not assigned a maximum contaminant level (MCL) violation as required. Two systems failed to collect the correct number of repeat samples following a total coliform-positive sample and did not collect the correct number of routine samples in the month following the total coliform-positive sample. MDEQ correctly reported one TCR monitoring and reporting (M/R) violation, and two MCL violations to SDWIS/Fed.

A summary of the TCR violations and discrepancies for the systems that were reviewed is in Tables 3B - 3G of the Executive Summary. See Exhibit 5 in Appendix C for a list of TCR discrepancies.

Recommendations

- MDEQ should ensure that all systems report TCR analytical results on time each month and that violations are reported to SDWIS/Fed when they fail to do so.
- MDEQ should ensure that systems collect sufficient repeat and routine samples following a total coliform-positive result.
- MDEQ should ensure that TCR MCL violations are assigned by the local health departments when warranted.
- MDEQ should ensure that all violations they assign are reported to SDWIS/Fed.

VIII. Phase II/V Rules

A. Notes Regarding Phase II/V Rule Review Methodology

Beginning in 1999, DV teams no longer examine data for the 1993 - 1995 initial compliance period for the Phase II/V rules. For this DV, the team reviewed data and actions from only the most recent compliance period of 2002 - 2004 for these rules. The review did not determine whether waivers were issued or grandfathered data were accepted properly, and the

team calculated compliance based on the schedule for monitoring established by the state for that compliance period.

B. Phase II/V Rule Reporting Process

Phase II/V data flow and compliance determination were described in Section III. MDEQ issues Phase II/V waivers to systems on the basis of whether a system uses groundwater or surface water sources, or whether they have an approved wellhead program and a vulnerability assessment (both of which may include testing for the presence of tritium in groundwater). PWSs do not request waivers, but are granted waivers after evaluation of an approved wellhead delineation program or vulnerability assessments are completed.

Inorganic Chemicals (IOCs). Asbestos waivers are granted statewide, unless there are concerns with the distribution system. Systems can also be waived for cyanide if they chlorinate. All IOCs may be waived to a cycle of one sample every 9 years.

Volatile Organic Compounds (VOCs). All VOCs may be waived to a cycle of one sample every 6 years based on vulnerability and detection history.

Synthetic Organic Chemicals (SOCs). SOCs may be entirely waived for non-vulnerable systems. If coal tar lining is present, tests for Benzo(a)pyrene are required. Contaminants waived statewide are dioxin, EDB, DBCP, di(ethylhexl)adipate, di(ethylhexyl)phthalate, diquat, endothall, glyphosate, polycyclic aromatic hydrocarbons (PAHs), dioxin and dalapon.

In addition US EPA Region 5 approved alternate "trigger levels" for SOCs that are higher than the detection limits set by US EPA Headquarters and higher than the upper confidence limits approved in the 1993 US EPA Headquarters memo. See Appendix E for this approval.

C. Phase II/V Rule Discrepancies

The DV team reviewed 29 CWSs primarily through hard copy files and some data from SDWIS/State for IOCs, VOCs, and SOCs for the compliance period January 1, 2002 through December 31, 2004; nitrates were reviewed for calendar years 2003 and 2004. Twenty NTNCWSs were likewise reviewed, but through the WaterTrack database, with some supplementary information from hard copy files. Twelve TNCWSs were reviewed via WaterTrack and some supplementary hard copy information for nitrate samples.

Five discrepancies were identified overall; two for nitrates, two for VOCs and one for SOCs. Discrepancies were identified for systems that failed to conduct sufficient quarterly monitoring after a detection of SOCs (one discrepancy for one system) and VOCs (two discrepancies for one system). One discrepancy was assigned for a missing nitrate sample. The final discrepancy was for an M/R violation correctly issued by MDEQ for a system's failure to

monitor for nitrates in 2004; compliance determination, however, was not done until October 2005.

Five violations assigned by MDEQ and reported to SDWIS/Fed were verified by the team.

A summary of the Phase II/V violations and discrepancies for the systems that were reviewed is in Tables 3B - 3G of the Executive Summary. For a system-specific list of Phase II/V discrepancies by chemical group, see Appendix C, Exhibit 6 for nitrate and nitrite; Exhibit 7 for IOCs; Exhibit 8 for VOCs; and Exhibit 9 for SOCs.

Recommendations

- In the event of a detect, MDEQ should ensure that quarterly sampling is conducted to determine whether the contaminant is reliably and consistently (R&C) below the MCL, even if other causes for the detections are suspected.
- Systems that do not monitor according to schedule should receive M/R violations.

IX. Filter Backwash Recycling Rule

A. Filter Backwash Recycling Rule Reporting Process

All systems provided written notification of whether they recycle by December 8, 2003. No systems were required to make any changes to their recycling process or any capital improvements to comply with the rule.

B. Filter Backwash Recycling Rule Discrepancies

The team reviewed hard copy correspondence for one system subject to the FBRR. No discrepancies were identified and no violations recorded by MDEQ and reported to SDWIS/Fed were verified by the team.

Recommendations

- None.

X. Stage 1 Disinfectant and Disinfection By-Products Rule

A. Stage 1 Disinfectant and Disinfection By-Products Reporting Process

Stage 1 DBPR sampling began on time. Distribution system disinfectant residual results are recorded on TCR monitoring forms and sometimes entered into SDWIS/State. Some systems record disinfectant residual and related calculations along with their monthly operating reports. In some district offices, the state is performing calculations for the systems. This is not occurring consistently across MDEQ, however. PWSs monitor for total organic carbon (TOC), alkalinity, chlorine dioxide, and chlorite. Compliance determination is carried out as described in Section III.

B. Stage 1 Disinfectant and Disinfection By-Products Rule Discrepancies

Hard copy and database information for systems that use a chemical disinfectant were reviewed for the period July 1, 2004 through June 30, 2005. This included 10 CWSs and no noncommunity systems. Eighteen discrepancies were identified, for compliance determination errors for six systems. All discrepancies related to minimum residual disinfectant levels (MRDL). No discrepancies for total trihalomethane, haloacetic acid or total organic carbon monitoring were identified.

Twelve discrepancies were assigned for one system in the Lansing District Office that did not have chlorine residual samples that matched the TCR samples taken, as required by the rule. In addition monthly and running annual averages for this system were not calculated. An additional five discrepancies were identified for systems for which running annual averages could not be located. According to Stage 1 DBPR, systems must report monthly and running annual averages for chlorine residuals taken at the same time and place as TCR samples. The state may perform these calculations for the system, but the calculations must be performed and recorded. An additional discrepancy was identified for a system where chlorine residuals were not found in September. The system re-sent correct results to the state once the team discovered samples were missing. A violation should have been reported to SDWIS/Fed for failure to submit results within 10 days of the end of the compliance period.

A summary of the DBPR violations and discrepancies for the systems that were reviewed is in Tables 3B - 3G of the Executive Summary. For a system-specific list of Stage 1 DBPR discrepancies, see Appendix C, Exhibit 11. No violations assigned by MDEQ and reported to SDWIS/Fed were verified by the team.

Recommendations

- MDEQ should ensure that systems are meeting the disinfectant residual reporting requirements. Within 10 days of the end of each month, systems are required to report to the state the monthly average of all samples taken in each month for the

last 12 months, the average of all monthly averages for the last 12 months, and whether this average exceeds the minimum residual disinfectant level (MRDL) of 4.0 mg/L. Alternatively, the state may calculate the averages for systems.

XI. Radiological Contaminants

A. Radiological Reporting Process

Radiological data flow and compliance determination were described in Section III. In 1995 US EPA Region 5 approved MDEQ's proposal to return to standard monitoring. The strategy allowed one grab sample at each entry point to the distribution system instead of quarterly monitoring for new systems. Existing systems that had been previously sampled for radionuclides were required to perform radionuclide monitoring in 1995 - 1998; all existing CWSs were required to monitor once during this period, then proceed on a "one sample every 4-years" schedule. All systems appeared to be following this monitoring strategy.

US EPA Region 5 provided guidance to its states in response to the March 2002 radiologicals rule reporting guidance. The region identified problems with the accurate reflection of radionuclide MCLs in SDWIS/Fed. The regional guidance, dated December 2, 2004 (Appendix E) allowed alternative reporting of radiological MCL violations by only requiring an MCL violation to be reported once, which could remain open until the system was returned to compliance. This was intended to reduce the states' burden of reporting each quarterly violation to SDWIS/Fed.

B. Radiological Discrepancies

The DV team reviewed primarily hard copy radiological data and occasionally SDWIS/State for 29 CWSs for the two most recent samples. Overall, compliance for the Radiologicals Rule was excellent. Only one discrepancy was identified, in the Kalamazoo District Office, for an M/R violation issued that could not be verified by the team. An MCL violation assigned by MDEQ and reported to SDWIS/Fed was verified by the team.

A summary of the radiological violations and discrepancies for the systems that were reviewed is in Tables 3B and 3C of the Executive Summary. For a system-specific list of radiological discrepancies, see Appendix C, Exhibit 12.

Recommendations

- MDEQ should rescind any erroneous violations from SDWIS/Fed.

XII. Lead and Copper Rule

A. Notes Regarding Lead and Copper Rule Review Methodology

Now that the LCR Minor Revisions (LCRMR) are in effect and questions about implementation and reporting requirements for the LCR and LCRMR have been resolved, the DV teams count LCR discrepancies as for other rules. The team reviewed the two most recent samples collected for the systems included in the review.

B. Lead and Copper Reporting Process

Michigan completed initial monitoring on time for the most part, and all systems required to install treatment by 1997 did so.

Lead and copper results are received as described in Section III. The state has primacy for LCRMR and is reporting accordingly (i.e., "deemed/done"). The state is continuing dialogue with US EPA Region 5 regarding requirements of the LCRMR. Michigan does not currently have the legal authority to enforce the requirement that all NTNCWSs collect five samples (see Appendix F, a letter from the Michigan Attorney General). However, through a Primacy Extension Agreement dated March 2002 the state agreed to notify EPA Region 5 of any instance where a system failed to collect the required number of samples (see Appendix G, Primacy Extension Agreement between Michigan and EPA Region 5). The DV revealed that 12 of the 20 NTNCWSs that were reviewed did not collect the federally required number of samples, and that the state had not notified EPA Region 5 of this occurrence. While the team acknowledges that the state is not legally permitted to enforce the five-sample requirement, it should have identified the system's monitoring performance and notified EPA Region 5 that the federal requirement was not met – as agreed to in the Primacy Extension Agreement. As a result, the 12 instances are treated as data flow discrepancies (errors) in this report, in that the state did not provide required data to EPA.

Ninetieth-percentile values for lead and copper are calculated by the MDEQ district offices. Or, if data are sent to the client PWS by a private laboratory, the laboratory and PWS calculate the 90th percentile and the MDEQ district office verifies the value. In the event of an action level exceedance (ALE), the district office sends a letter detailing follow-up steps required. The team noted that LCR files were complete and detailed, with excellent documentation of sampling tiers and sites. Reporting forms also indicated maximum and minimum sample values as well as the 90th percentiles. The team did note that not all LCR sampling plans appeared to have been reviewed by the district office. Also, new systems did not always begin LCR sampling in a timely fashion — one system in the Lansing District Office was online in July 2004, but did not begin LCR sampling until June 2005.

Systems purchasing water from the City of Detroit (MI0001800) use a modified consecutive system approach to monitoring for lead and copper. Each individual water system is required to monitor for lead and copper, but at a reduced number of sampling sites.

C. Lead and Copper Discrepancies

The DV team reviewed primarily hard copy results and occasionally SDWIS/State for lead and copper data for the two most recent samples for 36 CWSs. WaterTrack data were reviewed for 20 NTNCWSs, with some supplementary information from hard copy files provided. A summary of the LCR violations and discrepancies for the systems that were reviewed is in Tables 3B - 3E of the Executive Summary. For a system-specific listing of lead and copper discrepancies, see Exhibit 12 in Appendix C.

Twenty-six discrepancies were identified for nine CWSs and 16 NTNCWSs. Twelve of these were for NTNCWSs that failed to collect at least five tap samples, as previously discussed. Six data flow discrepancies were assigned for failure to report 90th percentile lead results (for systems serving more than 3,300 customers, after 2002) or 90th percentile exceedances to SDWIS/Fed. An additional data flow discrepancy was issued for a system that was assigned an M/R violation in SDWIS/State which was not reported to SDWIS/Fed. Two systems, one a school, that sampled outside the summer months of June through September received a discrepancy each.

MDEQ requires sampling according to a triennial schedule for reduced lead sampling. Two discrepancies were assigned for two systems that took samples more than 3 years apart. One of these systems, the Village of Benzonia, was incorrectly notified by the MDEQ that it could sample outside of the 3-year window.

Two CWSs received discrepancies for failure to collect enough lead and copper samples based on population served and one discrepancy was assigned for a system that submitted sample results late, but did not receive a reporting violation.

Eight violations assigned by MDEQ and reported to SDWIS/Fed were verified by the team.

Recommendations

- MDEQ should ensure that all ALEs and lead 90th percentile results for systems serving more than 3,300 customers are reported to SDWIS/Fed as sample results.
- MDEQ should ensure that systems sample in the summer months of June through September or receive a violation. Alternately, another 4-month compliance period could be assigned to the systems.

- MDEQ should assign and report violations when PWSs fail to collect triennial samples on time.

- MDEQ should ensure that PWSs collect enough tap samples based on population served and that violations are reported to SDWIS/Fed for all systems that fail to do so.

XIII. Surface Water Treatment Rule

A. Surface Water Treatment Rule Reporting Process

Ground water under the direct influence of surface water (GWUDI) determinations in Michigan have been completed, with four CWSs classified as GWUDI.

District offices receive and review monthly operating reports (MORs). Compliance is determined manually. There are no statewide standardized forms, but some districts use standardized forms for their systems.

B. Surface Water Treatment Rule Discrepancies

The team reviewed no non-purchased surface water systems serving populations fewer than 10,000 persons.

Recommendations

- None.

XIV. Interim Enhanced Surface Water Treatment Rule

A. Interim Enhanced Surface Water Treatment Rule Reporting Process

Michigan surface water CWSs serving more than 10,000 persons have begun monitoring and reporting according to the IESWTR. The reporting process and compliance determinations are the same as for the SWTR described in Section XIII. Disinfection benchmarking has been completed.

B. Interim Enhanced Surface Water Treatment Rule Discrepancies

The team reviewed hard copy summaries for one non-purchased surface water system serving a population of more than 10,000 for the period July 1, 2004 through June 30, 2005. Overall, compliance with the IESWTR was very good. The team assigned one compliance

determination discrepancy for a system in the Jackson District Office, with a turbidity report that showed the PWS collected only 17 of 24 required samples on May 11, 2005, without an explanation for the missing samples. The state contacted the PWS after the team noted the missing data. The PWS states that the missing data for May 11 was a holdover from the April 11 report, when the PWS was shut down for part of the day. The state provided the team with a corrected report after the on-site visit. However, a violation should have been issued to the system for missing turbidity results within 10 days after the end of the month.

A summary of the IESWTR violations and discrepancies for the systems that were reviewed is in Tables 3B - 3C of the Executive Summary. For a system-specific listing of IESWTR discrepancies, see Exhibit 15 in Appendix C.

Recommendations

- MDEQ should ensure that PWSs collect adequate turbidity and chlorine residual samples, and that violations are assigned and reported to SDWIS/Fed for systems that fail to do so.

XV. Public Notification Rule

A. Public Notification Rule Reporting Process

In 2001, the DV team began confirming that PN was requested and received for all violations relevant to the compliance periods reviewed. The team conducts the PN review to ensure that requested PN is received by the state in the specified time period and, if PN is not received, that violations are assigned for failure to provide PN.

MDEQ tracks request and receipt of PN, and assigns and reports violations to SDWIS/Fed for failure to perform PN, though no such violations were noted by the team in any of the district offices. Evidence of public notice requests and documentation of PN completed was present in MDEQ files.

B. Public Notification Rule Discrepancies

Thirty-six CWSs, 20 NTNCWSs, and 12 TNCWSs were reviewed for compliance with PN. No discrepancies were identified. All systems required to complete PN did so according to the required schedule.

Recommendations

- None.

The DV team hopes that the findings and recommendations outlined in this report will be of use to MDEQ in improving data reporting and tracking methods.

Appendix A
Systems Selected for Review in Michigan

PWSID	System Name	Population	System Type	Source of Water

Community Water Systems

MI0000710	BIG RAPIDS	11,900	C	GW
MI0002310	FLINT, CITY OF	124,943	C	SWP
MI0002500	FRENCHTOWN TOWNSHIP	19,800	C	SW
MI0003760	LANSING BOARD OF WATER & LIGHT	131,546	C	GW
MI0003990	MACOMB TOWNSHIP	64,000	C	SWP
MI0004530	MOUNT PLEASANT, CITY OF	23,285	C	SW
MI0006460	SUMPTER TWP	11,856	C	SWP
MI0006580	THOMAS TOWNSHIP	11,877	C	SWP
MI0000340	BAD AXE	3,462	C	GW
MI0001400	CHIKAMING TOWNSHIP	3,717	C	GW
MI0002180	ESSEXVILLE, CITY OF	3,766	C	SWP
MI0003090	HASTINGS	6,800	C	GW
MI0004170	MASON, CITY OF	6,800	C	GW
MI0005400	PLYMOUTH	9,413	C	SWP
MI0000610	VILLAGE OF BENZONIA	519	C	GW
MI0000700	POWELL TOWNSHIP	300	C	GW
MI0001005	BURT VIEW CONDOMINIUMS	44	C	GW
MI0001915	DUVERNAY PARK APARTMENTS	68	C	GW
MI0002851	GREENVILLE ACRES	50	C	GW
MI0003475	JAMES TOWNSHIP	2,300	C	SWP
MI0004470	MONTAGUE	2,407	C	GW
MI0004877	OAKLAND TOWNSHIP SE	1,996	C	GW
MI0005229	THE PENINSULA DEVELOPMENT LLC	270	C	GW
MI0005355	PIRATES COVE CONDOMINIUMS	42	C	GW
MI0005549	POTTAWATTAMIE PROPERTIES, LLC	34	C	GW
MI0005905	SANDHILL MANOR	116	C	GW
MI0006625	ELMWOOD TWP - TIMBERLEE	429	C	GW
MI0006720	UNION CITY	1,804	C	GW
MI0006790	VERMONTVILLE, VILLAGE OF	789	C	GW
MI0006850	WALDRON	591	C	GW
MI0006901	CLEAN WATER ASSOCIATION	25	C	GW
MI0040002	ALLEGAN MOBILE ESTATES	100	C	GW
MI0040042	BARRY'S RESORT	125	C	GW
MI0040326	WOODLAND LAKE MOBILE COURT	162	C	GW
MI0040525	PINE ACRES MOBILE HOME PARK	50	C	GW
MI0040652	COUNTRY MEADOWS VILLAGE	768	C	GW

Nontransient Noncommunity Water Systems

MI1020137	CONTINENTAL INDUSTRIES	100	NTNC	GW
MI1320407	PLAYCARE LEARNING CENTER	128	NTNC	GW
MI1920506	GRAND LEDGE RAID HANGAR	25	NTNC	GW
MI2320114	TOT SPOT, THE	58	NTNC	GW
MI2520389	NORTHWAY POINT PLAZA	30	NTNC	GW
MI4120526	CRESTWOOD ELEMENTARY SCHOOL	470	NTNC	GW
MI4420325	HADLEY ELEMENTARY SCHOOL	220	NTNC	GW
MI4520028	BLUEBIRD RESTUARANT & BAR	1,000	NTNC	GW
MI5420192	STANWOOD ELEMENTARY	346	NTNC	GW
MI5620076	NORTH MIDLAND FAMILY CENTER`	200	NTNC	GW
MI5820140	FIRST BAPTIST CHURCH	200	NTNC	GW
MI6020093	ALBERT TWP SYSTEM 1	50	NTNC	GW
MI6320739	CLARKSTON MIDDLE SCHOOL	900	NTNC	GW
MI6321233	CEDAR CREST ACADEMY	200	NTNC	GW
MI6321596	ADVANCED AUTO TRENDS, INC.	100	NTNC	GW
MI6322622	TEDDY BEAR PLAYHOUSE	64	NTNC	GW
MI7520240	WASTE MANAGEMENT OF MICHIGAN	50	NTNC	GW
MI7820088	VIRON INTERNATIONA CORP.	25	NTNC	GW
MI8120456	THETFORD CORPORATION	50	NTNC	GW
MI8120531	ANN ARBOR CHRISTIAN SCHOOL	100	NTNC	GW

Transient Noncommunity Water Systems

MI1220080	CRYSTAL BEACH BUTLERS RESORT	100	NC	GW
MI1620329	U OF M BIOLOGICAL STATION	275	NC	GW
MI2220078	NORDIC TRADING POST	35	NC	GW
MI2521153	THOMAS DESIGN - BLDG B	100	NC	GW
MI2521455	JOHN'S MARATHON	150	NC	GW
MI3320034	EL DORADO GOLF COURSE	200	NC	GW
MI3320163	SPAG'S BAR AND GRILL	25	NC	GW
MI3720177	POHL'S MARKET	25	NC	GW
MI4320100	USDA HURON MANISTEE NF	25	NC	GW
MI5220122	GRAND SLAM BAR	25	NC	GW
MI5420217	MECOSTA PINES CAMPGROUND, LLC	150	NC	GW
MI6520170	TROLL LANDING	200	NC	GW

Appendix B

Data Verification Discrepancy Definitions

DATA VERIFICATION DISCREPANCY DEFINITIONS

There are two types of discrepancies: data flow discrepancies and compliance determination discrepancies. Data flow discrepancies are violations of National Primary Drinking Water Regulations that are detected by the state, but are not forwarded to SDWIS/Fed. The team knows that the state detected the violation when it finds correspondence with the system, enforcement actions, or violations in the state database. Data flow discrepancies also occur when the state incorrectly reports the violation to SDWIS/Fed, such as incorrectly coding a violation. Compliance determination discrepancies occur when the state did not detect a violation or reports a violation to SDWIS/Fed that was not substantiated by information contained in the state files or database. The following is a complete list of the types of discrepancies identified by the team and their definitions.

Inventory — A discrepancy exists if there is a difference between the state data and the data in the SDWIS/Fed 35 report. Inventory data reviewed include:

System Type — Community Water System (CWS), Nontransient Noncommunity Water System (NTNCWS), or Transient Noncommunity Water System (TNCWS).

System Status — Active or Inactive.

Source — Ground Water (GW), Purchased Ground Water (GWP), Surface Water (SW), or Purchased Surface Water (SWP), Ground Water Under the Direct Influence of Surface Water (GWUDI) and Purchased Ground Water Under the Direct Influence of Surface Water (PGWUDI).

Population and Service Connections — a discrepancy is recorded if the difference between state and SDWIS/Fed data is greater than 10 percent or affects a system's monitoring requirements.

Address, Name, PWSID — address discrepancies are determined from the primary address field.

Sanitary Survey — a discrepancy is issued if surveys are not conducted every 5 years and no '28' violation is issued by the state and submitted to SDWIS/Fed.

Consumer Confidence Report (CCR) — a discrepancy is recorded if a CCR is not received by July of the appropriate year and a violation is not properly assigned by the state and submitted to SDWIS/Fed.

For the remaining elements reviewed during the DV, there are two types of discrepancies noted. Data flow discrepancies, instances where the state files and SDWIS/Fed do not agree, make up the first type. Compliance determination discrepancies make up the second type. These discrepancies are either instances where the state overlooked a violation or when the DV team determines that the state is not following the federal regulations, its approved primacy package,

or another policy approved by the EPA Region. The report will itemize both types of discrepancies.

TCR, Phase II/V, Radiologicals, and Stage 1 DBPR. For monitoring and reporting (M/R) and maximum contaminant level (MCL) violations, discrepancies are generally of two types: (1) evidence of a violation in the state data that is not recorded in SDWIS/Fed or (2) a violation in SDWIS/Fed which is not supported by state data.

LCR. In addition to M/R discrepancies under the Lead and Copper Rule, milestone and treatment technique discrepancies are also noted. Milestones are important system events, such as a lead exceedance (PB90) or copper exceedance (CU90), that are SDWIS/Fed reporting requirements. Treatment techniques include steps that a system is required to take following a lead or copper exceedance to ensure public safety and show compliance with the LCR (e.g., public education or corrosion control study).

SWTR and IESWTR. Discrepancies include M/R, treatment technique, or filtration status. Treatment techniques refer to turbidity and disinfection residual level requirements under the SWTR. Filtration status indicates whether a system has a filtration plant on line, if the system is filtered, or whether the system is installing filtration.

FBRR. Discrepancies are issued for M/R and treatment technique violations. Treatment techniques refer to FBRR requirements to recycle all recycle streams to a state-approved recycle return location and to make capital improvements to create an approved location, if necessary.

Appendix C

System Specific Data Discrepancies
Exhibits 1-16

Exhibit 1
Name, Address, Administrative Contact and PWSID Discrepancy Report

		ADDRESS	
PWSID	SYSTEM NAME	STATE RECORDS	SDWIS/FED
COMMUNITY WATER SYSTEMS			
Bay City District Office			
MI0004530	Mount Pleasant, City of	AC add: 1303 North Franklin	AC add: 401 North Main Street
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS			
MI6320739	Clarkston Middle School	AC add: 6590 Middle Lake Road	AC add: PO Box 1050, 6389 Clarkston Rd
MI8120456	Thetford Corporation	AC add: 800 Baker Road	AC add: P.O. Box 1285
MI8120531	Ann Arbor Christian School	AC add: 2450 Oakdale Dr.	AC add: 5500 Whitmore Lake Rd.
TRANSIENT NONCOMMUNITY WATER SYSTEMS			
No discrepancies were identified.			

AC - administrative contact *ADD - Address* *NF - not found*

Exhibit 2
Inventory Discrepancy Report

PWSID	SYSTEM NAME	POPULATION		SERVICE CONNECTIONS		OWNER TYPE		TYPE OF SYSTEM		STATUS OF SYSTEM		SOURCE	
		STATE	SDWIS /FED	STATE	SDWIS /FED	STATE	SDWIS /FED	STATE	SDWIS /FED	STATE	SDWIS /FED	STATE	SDWIS /FED
COMMUNITY WATER SYSTEMS													
Lansing District Office													
MI0003760	Lansing Board of Water & Light	166,995	131,546										
Bay City District Office													
MI0004530	Mount Pleasant, City of	25,983	23,285										
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS													
No discrepancies were identified.													
TRANSIENT NONCOMMUNITY WATER SYSTEMS													
No discrepancies were identified.													

CWS - Community Water System
F - Federal Government
GP - purchased ground water source
GU - ground water under the influence of surface water
GUP - purchased ground water under the influence of surface water
GW - groundwater source
L - local government
M - mixed public/private
N - Native American
NF - not found
NTNC - nontransient noncommunity water system
P - private
S - state government
SDWIS/FED - violation listed in SDWIS/Fed
STATE - violation assigned by the state
SW - surface water source
SWP - purchased surface water source
TNC - transient noncommunity water system

Exhibit 3
Sanitary Survey Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Kalamazoo District Office												
MI0005549	Pottawattamie Properties, LLC	NF	NF	NF	NF	NF	NF	3100	28	1/1/02	Sanitary surveys were conducted in 1997 and 2003, more than 5 years apart. No violation assigned.	1 cd M/R
Mobile Home Parks												
MI0040326	Woodland Lake Mobile Court	NF	NF	NF	NF	NF	NF	3100	28	1/1/04	Sanitary surveys were conducted in 1999 and 2005, more than 5 years apart. No violation assigned.	1 cd M/R
MI0040652	Country Meadows Village	NF	NF	NF	NF	NF	NF	3100	28	1/1/02	Sanitary surveys were conducted in 1997 and 2003, more than 5 years apart. No violation assigned.	1 cd M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
MI4120526	Crestwood Elementary School	NF	NF	NF	NF	NF	NF	3100	28	1/1/04	Sanitary surveys were conducted in 1999 and 2005, more than 5 years apart. No violation assigned.	1 cd M/R
MI6020093	Albert TWP System 1	NF	NF	NF	NF	NF	NF	3100	28	6/29/99	NTNCWSs required to have first sanitary survey conducted by 6/29/99. First survey found on 2/4/02. No violation assigned.	1 cd M/R
MI7820088	Viron Internationa Corp.	NF	NF	NF	NF	NF	NF	3100	28	1/1/03	Sanitary surveys were conducted in 1998 and 2004, more than 5 years apart. No violation assigned.	1 cd M/R

Exhibit 3
Sanitary Survey Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
MI1620329	U of M Biological Station	NF	NF	NF	NF	NF	NF	3100	28	1/1/01	Sanitary surveys were conducted in 1996 and 2002, more than 5 years apart. No violation assigned.	1 cd M/R
MI3320034	El Dorado Golf Course	NF	NF	NF	NF	NF	NF	3100	28	1/1/02	Sanitary surveys were conducted in 1997 and 2004, more than 5 years apart. No violation assigned.	1 cd M/R
MI3320163	Sprag's Bar and Grill	NF	NF	NF	NF	NF	NF	3100	28	1/1/03	Sanitary surveys were conducted in 1998 and 2004, more than 5 years apart. No violation assigned.	1 cd M/R
MI6520170	Troll Landing	NF	NF	NF	NF	NF	NF	3100	28	1/1/98	Sanitary surveys were conducted in 1993 and 2003, more than 5 years apart. No violation assigned.	1 cd M/R

28 - Sanitary Survey Violation, TCR
DV - violations assessed by the data verification team
NF - not found
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 4
Consumer Confidence Report Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Bay City District Office												
MI0000340	Bad Axe	NF	NF	NF	NF	NF	NF	7000	72	10/1/04	PWS submitted CCR certification on 10/11/04. State allows 10 days for receipt of the certification. A violation was not assigned because this is a low priority issue for the state.	1 cd M/R
Cadillac District Office												
MI0005905	Sandhill Manor	7000	72	10/1/04	NF	NF	NF	7000	72	10/1/04	PWS submitted CCR certification on 10/21/04. State noted that it was a violation, but the violation was not reported to SDWIS/Fed.	1 df M/R

Exhibit 4
Consumer Confidence Report Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
Gwinn District Office												
MI0000700	Powell Township	NF	NF	NF	NF	NF	NF	7000	72	10/1/04	PWS submitted CCR certification on 10/19/04. PWS was training a new operator, and the certification deadline was missed. No violation assigned.	1 cd M/R

7000 - Consumer Confidence Report Rule
71 - M/R violation
72 - CCR inadequate reporting/late certification

DV - violations assessed by the data verification team
M/R - monitoring and/or reporting Violation
NF - not found

SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 5
Total Coliform Rule Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Lansing District Office												
MI0002310	Flint, City of	3100	26	7/1/04	NF	NF	NF	3100	26	7/1/04	PWS collected only seven of 12 required repeat samples. State did not report the violation to SDWIS/Fed.	1 df M/R
Mobile Home Parks												
MI0040652	Country Meadows Village	NF	NF	NF	NF	NF	NF	3100	23	1/1/05 - 4/1/05 6/1/05	TCR results were submitted to the state more than 10 days after the end of the compliance period. No violations assigned.	5 cd M/R
NONTRANSIENT NONCOMMUNITY SYSTEMS												
MI1320407	Playcare Learning Center	3100	22	7/1/04	NF	NF	NF	3100	22	7/1/04	MCL violation was assigned by the state but was not reported to SDWIS/Fed.	1 df MCL
		NF	NF	NF	NF	NF	NF	3100	24	8/1/04	PWS collected only two of five required samples in the month following a positive TCR result. No violation assigned.*	1 cd M/R
		NF	NF	NF	NF	NF	NF	3100	26	9/1/04	Four routine samples were TC-positive. Expect to see 12 repeat samples collected, PWS collected two repeat samples. Violation not assigned.*	1 cd M/R
MI1320407	Playcare Learning Center (continued)	NF	NF	NF	NF	NF	NF	3100	22	9/1/04	Four of six TCR samples were TC-positive. MCL violation not assigned.*	1 cd MCL

Exhibit 5
Total Coliform Rule Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
MI5420217	Mecosta Pines Campground, LLC	3100	23	5/1/05	NF	NF	NF	3100	25	5/1/05	PWS did not collect any repeat samples after a total coliform-positive sample. Violation was incorrectly coded in Watertrack, and was not reported to SDWIS/Fed.	1 df M/R
		NF	NF	NF	NF	NF	NF	3100	23	6/1/05	PWS did not collect any routine samples in the month following a total coliform-positive sample. No violation assigned.	1 cd M/R

3100 - Total Coliform Rule
23 - M/R Routine Major
24 - M/R Routine Minor
25 - M/R Repeat Major
26 - M/R Repeat Minor

 # cd M/R (or MCL) - a compliance determination discrepancy
 # df M/R (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
MCL - maximum contaminant level violation
M/R - monitoring and/or reporting Violation

NF - not found
*Q_ - calendar quarter, 200_*
STATE RECORDS - violation assigned by the state
SDWIS/FED - violations listed in SDWIS/Fed

* From discussions with the State, it's believed that:
a. the pump had to be replaced and the well was out of service from the time of the lightning strike in July 2004 until September 20, 2004,
b. that site visits were conducted by the LHD in August and September;

c. disinfection was necessary several times over the course of August and early September;
d. that no water was served to the public at that time, and,
e. that public notice and bottled water were provided to the public during this time period.

No documentation was found in the file that indicated to the reviewer that these procedures protecting public health were followed. We know that the LHD did not report a PN request (SIE) or PN received (SIF) code/date to SDWIS/Fed for the July 2004 MCL. If documentation had been provided to support a, b, c, d and e above, these discrepancies could have been removed from the report. But the problem is not a public health issue; the problem is the lack of documentation by the LHD, which the state has pointed out to the LHD.

Exhibit 6
Nitrate/Nitrite Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
No discrepancies were identified.												
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
MI5620076	North Midland Family Center	NF	NF	NF	NF	NF	NF	1040	03	1/1/03	PWS did not collect a nitrate sample in 2003. No violation was issued. The state entered the violation into SDWIS/State on 10/4/05.	1 cd M/R
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
MI2220078	Nordic Trading Post	NF	NF	NF	NF	NF	NF	1040	03	1/1/03	PWS did not collect a nitrate sample in 2003. State notes that a 2003 sample was not collected, because the PWS collected a sample for fiscal year 2003 on 12/4/02, then the PWS was rescheduled for annual monitoring in 2004. No violation assigned.	1 cd M/R

1038 - nitrate/nitrite
1040 - nitrate
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
DV - violations assessed by the data verification team
 # cd M/R (or MCL) - a compliance determination discrepancy # df
M/R (or MCL) - a data flow discrepancy
MCL - maximum contaminant level violation
M/R - monitoring and/or reporting violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 7
IOC Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

1005 - arsenic
1010 - barium
1015 - cadmium
1020 - chromium
1024 - cyanide
1025 - fluoride
1035 - mercury
1045 - selenium
1074 - antimony
1075 - beryllium
1085 - thallium
1094 - asbestos
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
M/R - monitoring and/or reporting violation
MCL - maximum contaminant level violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 8
VOC Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Jackson District Office												
MI0002500	Frenchtown Township	NF	NF	NF	NF	NF	NF	2991 2955	03	7/1/02 10/1/02	Toluene and total xylenes were detected in the 4/25/02 sample. Expect to see quarterly sampling after a detect to determine if the PWS is R&C below the MCL. The state did not require quarterly sampling because the PWS had painted pumps in the sample tap room a few days before the sample was collected, and because the PWS collects VOC samples annually.	2 cd M/R
NONTRANSIENT NONCOMMUNITY SYSTEMS												
No discrepancies were identified.												

2378 - 1,2,4-trichlorobenzene
2380 - cis-1,2-dichloroethylene
2955 - total xylenes
2964 - dichloromethane
2968 - o-dichlorobenzene
2969 - para-dichlorobenzene
2976 - vinyl chloride
2977 - dichloroethene
2979 - trans-1,2-dichloroethylene
2980 - 1,2-dichloroethane
2981 - 1,1,1-trichloroethane
2982 - carbon tetrachloride
2983 - 1,2-dichloropropane
2984 - trichloroethylene
2985 - 1,1,2-trichloroethane
2987 - tetrachloroethylene
2989 - chlorobenzene
2990 - benzene
2991 - toluene
2992 - ethylbenzene
2996 - styrene
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
M/R - monitoring and/or reporting violation
MCL - maximum contaminant level violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 9
SOC Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Jackson District Office												
MI0002500	Frenchtown Township	NF	NF	NF	NF	NF	NF	2050	03	10/1/04	Atrazine was detected in samples collected 7/7/04 and 9/9/04. Expect to see quarterly sampling to determine if PWS is R&C below the MCL. No violation was assigned because the detections were well below the MCLs.	1 cd M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
No discrepancies were identified.												

2005 - endrin
2010 - lindane
2015 - methoxychlor
2020 - toxaphene
2031 - dalapon
2032 - diquat
2033 - endothall
2034 - glyphosate
2035 - bis(2-ethylhexyl)adipate
2036 - oxamyl (Vydate)
2037 - simazine
2040 - picloram
2041 - dinoseb
2042 - hexachlorocyclopentadiene
2046 - carbofuran
2050 - atrazine
2051 - alachlor
2063 - dioxin
2065 - heptachlor
2067 - heptachlor epoxide
2105 - 2,4-d
2110 - 2,4,5-tp (Silvex)
2274 - hexachlorobenzene
2298 - bis(2-ethylhexyl)phthalate
2306 - benzo(a)pyrene
2326 - pentachlorophenol
2383 - polychlorinated Biphenyls (PCBs) - Total
2931 - dibromochloropropane
2946 - ethylene dibromide
2959 - chlordane
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
M/R - monitoring and/or reporting violation
MCL - maximum contaminant level violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 10
FBRR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											
TRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

0500 - filter backwash recycling rule
39 - M/R, failure to notify state of recycling status
40 - TT, failure to recycle to approved location or capital improvements failure
 # cd M/R (or TT) - a compliance determination discrepancy
 # df M/R (or TT) - a data flow discrepancy
DV - violations assessed by the data verification team
TT - treatment technique violation
M/R - monitoring and/or reporting violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 11
DBPR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Jackson District Office												
MI0002500	Frenchtown Township	NF	NF	NF	NF	NF	NF	0999	27	9/1/04	Chlorine residuals were not found for September. PWS resent correct results to the state once the team discovered samples were missing. A violation should have been reported to SDWIS/Fed for failure to submit results within 10 days of the end of the compliance period.	1 cd M/R
		NF	NF	NF	NF	NF	NF	0999	27	6/1/05	The running annual average for disinfectant residuals was not calculated. No violation assigned.	1 cd M/R
Lansing District Office												
MI0003760	Lansing Board of Water & Light	NF	NF	NF	NF	NF	NF	0999	27	7/1/04 - 6/1/05	The total number of chlorine residual samples collected does not match the number of TCR samples collected in each month, except for February 2005. In July 2004 and January through June 2005, monthly averages and the number of samples collected was not provided. No violations assigned.	12 cd M/R
MI0005229	The Peninsula Development LLC	NF	NF	NF	NF	NF	NF	0999	27	6/1/05	Running annual average for disinfectant residual was not found. No violation assigned.	1 cd M/R

Exhibit 11
DBPR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
MI0004170	Mason, City of	NF	NF	NF	NF	NF	NF	0999	27	6/1/05	Running annual average for disinfectant residual was not found. No violation assigned.	1 cd M/R
Bay City District Office												
MI0004530	Mount Pleasant, City of	NF	NF	NF	NF	NF	NF	0999	27	6/1/05	Running annual average for disinfectant residual was not found. This value is not routinely calculated by the state or the system, because the monthly averages are well below the MRDL. No violation assigned.	1 cd M/R
Mobile Home Parks												
MI0040652	Country Meadows Village	NF	NF	NF	NF	NF	NF	0999	27	6/1/05	Running annual average for disinfectant residual was not found. This value is not routinely calculated by the state or the system, because the monthly averages are well below the MRDL. No violation assigned.	1 cd M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
No discrepancies were identified.												
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
No discrepancies were identified.												

0999 - chlorine
1006 - chloramine
1008 - chlorine dioxide
1009 - chlorite
1011 - bromate
2456 - haloacetic acids
2920 - total organic carbon (TOC)/alkalinity
2950 - total trihalomethanes

01 - MCL single sample 02 - MCL average violation
11 - maximum disinfectant residual level violation, acute or non acute
27 - monitoring/reporting (DBP)
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team

MCL - maximum contaminant level violation
M/R - monitoring and/or reporting violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 12
Radiological Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Kalamazoo District Office												
MI0005549	Pottawattamie Properties, LLC	4000	03	1/1/00	4000	03	1/1/00	NF	NF	NF	PWS collected samples in 1998 and 2001. Team was unable to confirm the violation. Violation should be removed from SDWIS/Fed.	1 df M/R

4000 - gross alpha
4010 - combined radium (-226 & -228)
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
DV - violations assessed by the data verification team
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
MCL - maximum contaminant level violation
M/R - monitoring and/or reporting violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Bay City District Office												
MI0000340	Bad Axe	Pb90 = .008 mg/L	Sample Result	10/1/02	NF	NF	NF	Pb90 = .008 mg/L	Sample Result	10/1/02	Lead 90th percentile value was not reported to SDWIS/Fed. Lead 90th percentile results for PWSs serving more than 3,300 persons should be reported to SDWIS/Fed as a sample result.	1 df M/R
MI0006580	Thomas Township	Pb90 = .0045 mg/L	Sample Result	7/19/04	NF	NF	NF	Pb90 = .0045 mg/L	Sample Result	7/19/04	Lead 90th percentile value was not reported to SDWIS/Fed. Lead 90th percentile results for PWSs serving more than 3,300 persons should be reported to SDWIS/Fed as a sample result.	1 df M/R
Cadillac District Office												
MI0000610	Village of Benzonia	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	PWS collected samples in 1999 and 2003, more than 3 years apart. State schedules LCR sampling in 3-year compliance periods, and a violation was not assigned.	1 cd M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
Kalamazoo District Office												
MI0001400	Chikaming Township	Pb90 = .0039 mg/L	Sample result	10/1/02	NF	NF	NF	Pb90 = .0039 mg/L	Sample result	10/1/02	Lead 90th percentile value was not reported to SDWIS/Fed. Lead 90th percentile results for PWSs serving more than 3,300 persons should be reported to SDWIS/Fed as a sample result.	1 df M/R
Lansing District Office												
MI0002310	Flint, City of	Pb90 = .004 mg/L	Sample result	10/1/02	NF	NF	NF	Pb90 = .004 mg/L	Sample result	10/1/02	Lead 90th percentile value was not reported to SDWIS/Fed. Lead 90th percentile results for PWSs serving more than 3,300 persons should be reported to SDWIS/Fed as a sample result.	1 df M/R
MI0003760	Lansing Board of Water & Light	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	The LCR sample results for 2002 were not received by the state until 8/13/03. A violation should have been reported for failure to submit results to the state within 10 days of the end of the compliance period. MI responds that the state had LCR results, and only the reporting form was late. No documentation was provided.	1 cd M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
MI0004170	Mason, City of	Cu90 = 2.06 mg/L	Sample Result	6/24/05	NF	NF	NF	Cu90 = 2.06 mg/L	Sample Result	6/24/05	PWS exceeded the copper action level. The exceedance was not reported to SDWIS/Fed as a sample result.	1 df M/R
		Cu90 = 1.81 mg/L	Sample Result	8/1/04	NF	NF	NF	Cu90 = 1.81 mg/L	Sample Result	8/1/04	PWS exceeded the copper action level. The exceedance was not reported to SDWIS/Fed as a sample result.	1 df M/R
MI0005229	The Peninsula Development LLC	NF	NF	NF	NF	NF	NF	5000	51	7/1/05	PWS began initial monitoring in 6/05. Based on its population, PWS should collect 10 samples. Only five samples were collected. No violation was assigned. At the time these first LCR samples were due, the operator for Peninsula Development contacted the Water Bureau, Lansing District Office, to report that enough customers had not yet connected to the system to justify 10 samples. He was told that only five LCR samples would be necessary based on the reduced number of customers currently being served. However, this reduced population was not documented because additional customers were already in various stages of construction. Without documentation, the discrepancy stands.	1 cd M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
Mobile Home Parks												
MI0040652	Country Meadows Village	NF	NF	NF	NF	NF	NF	5000	52	10/1/03	Based on its population, this PWS should collect 10 LCR samples. Only nine samples collected in 2003. The system was accidentally instructed by the state to collect only nine samples, so the violation was waived. This violation is valid and should be reported to SDWIS/Fed.	1 cd M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
MI1020137	Continental Industries	NF	NF	NF	NF	NF	NF	5000	51	1/1/05	PWS has not collected two consecutive 6 month samples since start up in 1999. PWS also collected only one of five required samples in 12/04. No violation assigned.	1 cd M/R
MI1320407	Playcare Learning Center	NF	NF	NF	NF	NF	NF	5000	51	10/1/02	PWS collected only two of five required samples for initial monitoring in 2002, and only three of five required samples for triennial monitoring in 2004. No violation assigned.	1 df M/R
MI1920506	Grand Ledge Raid Hangar	NF	NF	NF	NF	NF	NF	5000	51	7/1/01	PWS collected only one of five required samples for initial monitoring in 2001 and 2002. No violation assigned.	1 df M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
MI2320114	Tot Spot, The	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	PWS collected only four of five required samples for triennial monitoring in 2002 and 2005. No violation assigned.	1 df M/R
MI2520389	Northway Point Plaza	NF	NF	NF	NF	NF	NF	5000	52	1/1/01	PWS collected only one of five required samples for triennial monitoring in 2001, and only two of five required samples for triennial monitoring in 2004. No violation assigned.	1 df M/R
MI4120526	Crestwood Elementary School	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	PWS collected samples for 2000 and 2004 in March and November, respectively. Annual and triennial samples should be collected during the summer months of June through September. No violation assigned.	1 cd M/R
MI4520028	Bluebird Restaurant & Bar	NF	NF	NF	NF	NF	NF	5000	52	1/1/00	PWS collected only one of 5 required samples in 2000. Samples collected in 2000 and 2003 were also collected in January and April respectively, and not during the summer months of June through September. No violation assigned.	1 df M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
MI5420192	Stanwood Elementary	NF	NF	NF	NF	NF	NF	5000	52	10/1/04	PWS collected only two of five required samples in 2004, and only one of five required samples in 2005. Samples were also collected in March, not during the summer months of June through September. No violation assigned.	1 df M/R
MI5620076	North Midland Family Center	NF	NF	NF	NF	NF	NF	5000	51	7/1/03	Based on a population of 200 persons, PWS should collect 10 samples for initial compliance. Only five samples were collected 6/23/03. Violation was not assigned because state believes that PWS needed to collect only five samples, which is the number of available sample taps.	1 df M/R
MI6020093	Albert Twp System 1	NF	NF	NF	NF	NF	NF	5000	52	1/1/01	PWS collected samples in 1998 and 2002, more than 3 years apart. State schedules LCR sampling in 3-year compliance periods, and a violation was not assigned. In addition, samples were not collected in the summer months of June through September.	1 cd M/R
MI6321233	Cedar Crest Academy	NF	NF	NF	NF	NF	NF	5000	52	1/1/01	PWS collected only one of five required samples in 2001. Samples for 2001 were collected in February, and samples for 2004 were collected in January, not during the summer months of June through September. No violation assigned.	1 df M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
MI6321596	Advanced Auto Trends, Inc.	5000	52	1/1/02	NF	NF	NF	5000	52	10/1/03	Violation was assigned by the state, but was not reported to SDWIS/Fed, for failure to collect enough tap samples, and for failure to collect samples during the summer months of June through September.	1 df M/R
MI6322622	Teddy Bear Playhouse	NF	NF	NF	NF	NF	NF	5000	52	10/1/03	PWS collected three of five required tap samples in January 2003, and not during the summer months of June through September. PWS collected two additional tap samples in July 2003. PWS also collected only one of five required samples in 2004. No violation assigned.	1 df M/R
MI7520240	Waste Management of Michigan	NF	NF	NF	NF	NF	NF	5000	52	1/1/03	PWS collected three of five required LCR samples from incorrect sites in the June through December 2002 sampling period. Only two sample sites were replaced. Violation was not assigned by the state or reported to SDWIS/Fed.	1 df M/R
MI7820088	Viron Internationa Corp.	NF	NF	NF	NF	NF	NF	5000	52	1/1/00	PWS collected only one of five required samples in 2000 and 2003. Samples were also not collected during the summer months of June through September. No violation assigned.	1 df M/R

Exhibit 13
LCR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
MI8120456	Thetford Corporation	NF	NF	NF	NF	NF	NF	5000	52	1/1/03	Not all compliance samples were collected during the summer months of June through September for 2003 and 2004. No violation assigned.	1 cd M/R

51 - initial monitoring violation
52 - follow-up/routine monitoring violation
53 - initial water quality parameters violation
56 - initial source water samples violation
57 - source water treatment recommendation violation or corrosion control treatment recommendation/study violation
58 - corrosion control treatments installation violation
65 - public education violation
ALE - action level exceedance
AO - administrative order
Cu - copper
DV - violations assessed by the data verification team
NF - not found
Pb - lead
PE - Public Education
PN - public notification
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 14
SWTR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											
TRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

0200 - surface water treatment rule
01 - MCL single sample violation
02 - MCL average violation
07 - treatment technique
31 - monitoring, routine/repeat (unfiltered)
36 - monitoring, routine/repeat (filtered)
41 - treatment technique
42 - failure to filter
DV - violations assessed by the data verification team
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
MCL - maximum contaminant level violation
M/R - monitoring or reporting violation NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 15
IESWTR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS CHEM ID	STATE RECORDS VIO TYPE	STATE RECORDS DATE	VIOLATIONS SDWIS/FED CHEM ID	VIOLATIONS SDWIS/FED VIO TYPE	VIOLATIONS SDWIS/FED DATE	VIOLATIONS DV CHEM ID	VIOLATIONS DV VIO TYPE	VIOLATIONS DV DATE	COMMENTS	
COMMUNITY WATER SYSTEMS												
Jackson District Office												
MI0002500	Frenchtown Township	NF	NF	NF	NF	NF	NF	300	36	5/1/05	The May 2005 turbidity report shows that the PWS collected only 17 of 24 required samples on May 11, 2005, without an explanation for the missing samples. The state contacted the PWS after the team noted the missing data. The PWS states that the missing data for May 11 was a holdover from the April 11 report, when the PWS was shut down for part of the day. The State provided the team with a corrected report after the on-site visit. However, a violation should have been issued to the system for missing turbidity results within 10 days after the end of the month.	1 cd M/R

0300 - interim enhanced surface water treatment rule
29 - response to individual filter trigger monitoring and reporting
37 - failure to profile or consult with state
38 - M/R IESWTR
43 - treatment technique, exceedance of 1 NTU
44 - treatment technique, >5% exceed .3 NTU
47 - treatment technique, construction of uncovered finished storage facility
48 - treatment technique, failure to meet Cryptosporidium site specific conditions
DV - violations assessed by the data verification team
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
MCL - maximum contaminant level violation
M/R - monitoring or reporting violation NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 16
Public Notification Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			SDWIS/FED			DV			Related Violation and Date	COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
No discrepancies were identified.												
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
No discrepancies were identified.												
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
No discrepancies were identified.												

01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
05 - notification, state
06 - notification, public
07 - treatment technique
DV - violations assessed by the data verification team

 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy
MCL - maximum contaminant level violation
M/R - monitoring and/or reporting violation
NF - not found
*Q_ - calendar quarter, 200_*
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed

SFJ - state formal notice of violation
SFK - bilateral compliance agreement signed
SFL - state administrative order (without penalty) issued
SFM - state administrative penalty assessed
SFO - state administrative order (with penalty) issued
SO+ - no additional formal action needed
SO6 - intentional no-action
STATE RECORDS - violation assigned by the state

Appendix D

Michigan Monitoring Waiver Program

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

DIVISION OF WATER SUPPLY

MONITORING WAIVER PROGRAM

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF PUBLIC HEALTH

3423 N. LOGAN / MARTIN L. KING JR. BLVD.
P.O. BOX 30195, LANSING, MICHIGAN 48909

VERNICE DAVIS ANTHONY, MPH, Director

June 16, 1993

Mr. John Dalessandro
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

Subject: Michigan's Phase II/V Waiver Program

Dear Mr. Dalessandro:

In your June 9, 1993 letter, you requested a revised final waiver program for the phase II/V contaminants prior to your final approval of the program. Enclosed is a copy of the correspondence concerning the Michigan program along with the original proposal and revisions as requested. The vulnerability assessment form has been revised and the updated version has been included in this submittal.

We have expanded the flow chart to cover second and third round monitoring. Although Dalapon is in the "limited scans" monitoring, the detection limit is not low enough to meet the Federal Register criteria. Therefore, we will develop a special statewide monitoring assessment for it similar to diquat, endothall, and glyphosate.

We hope this information is adequate for you to proceed with final approval of our program.

Very truly yours,

James K. Cleland

James K. Cleland, P.E., Chief
Division of Water Supply
Bureau of Environmental
and Occupational Health

JKC:ae
Enclosure

BASIC PROGRAM

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

MEMORANDUM

DATE: May 8, 1992

TO: Water Supply Staff and U. P. (All Technical)

FROM: Elgar Brown EWB

SUBJECT: Waiver Policy for Phase II & V Organic Chemical Contaminants

EPA has commented on our waiver policy and a few changes have been incorporated. We have also met with Department of Agriculture officials to discuss this policy. The plan is shown on the attached flow chart and explanations are provided with the chart. Guidance on developing the procedures for granting waivers will be further developed as additional information becomes available, but initially it is as follows:

I. Total Waivers - A total waiver from all of the monitoring requirements for the phase II and V contaminants, except distribution concerns such as asbestos and coal tar linings, may be granted under certain conditions. This may be done through either an area wide waiver or a system specific susceptibility waiver. Criteria for these are listed in Chart A.

II. Limited Scan Waivers - These waivers will be granted to systems where there is information available concerning the well construction and the well meets construction standards. These systems would very likely not be impacted by pesticides and herbicides, but there may have been some use in the area. Criteria for these are listed in Chart B.

III. No waivers - Some systems will be required to do a full scan monitoring (except dioxin, asbestos) for the full four quarters. These may be the surface water intakes, very shallow wells in farming areas, wells in karst bed rock and wells under the direct influence of surface water.

IV. Systems will be required to do the XPA scan monitoring if they have mains with coal tar linings. This scan would detect benzo(a)pyrene * which is the most common PAH. These systems must also assess the monitoring requirements of their source.

V. The state will do limited monitoring for asbestos and dioxin at the most vulnerable sites and probably waive the remaining supplies in the state based on area waivers. The state will also do some limited monitoring for EDB, DBCP, glyphosate, endothall, and diquat. *

The phase II and V organic (regulated and unregulated) contaminants that are not analyzed in the limited scans (XAH, XLP, XNP, XPI) are: ← EPA Methods 525.1, 531.1, 515.1)

- dibromochloropropane (DBCP)
- ethylene dibromide (EDB)
- di(ethlyhexyl)adipate *
- di(ethylhexyl)phthalate *
- diquat
- endothall
- glyphosate
- ~~PAH~~'s
- dioxin
- asbestos
- ~~sic~~ pcm

The compounds that are included in these scans are listed on the attached sheets.

According to Dave Wade, from the Michigan Department of Agriculture, the dibromochloropropane and ethylene dibromide have been banned for several years. These are fumigants and as such were not typically applied directly to the soil.

Di(ethylhexyl)adipate is used as a plasticizer in the development of products such as synthetic rubber, food packaging materials and cosmetics. It biodegrades readily and has a high affinity for soil particles. Due to this, it is not expected to migrate to the water table. Based on this, the contaminant could be waived in most cases.

Di(ethlyhexyl)phthalate is the most common of a family of phthalates that are common in the environment. They are used as plasticizers in PVC resins. This can be detected in the XPA scan and some state wide monitoring will be done for this.

Diquat, endothall, and glyphosate are common in the environment, but they biodegrade rapidly and are not persistent. Vulnerable supplies may be required to monitor for these compounds.

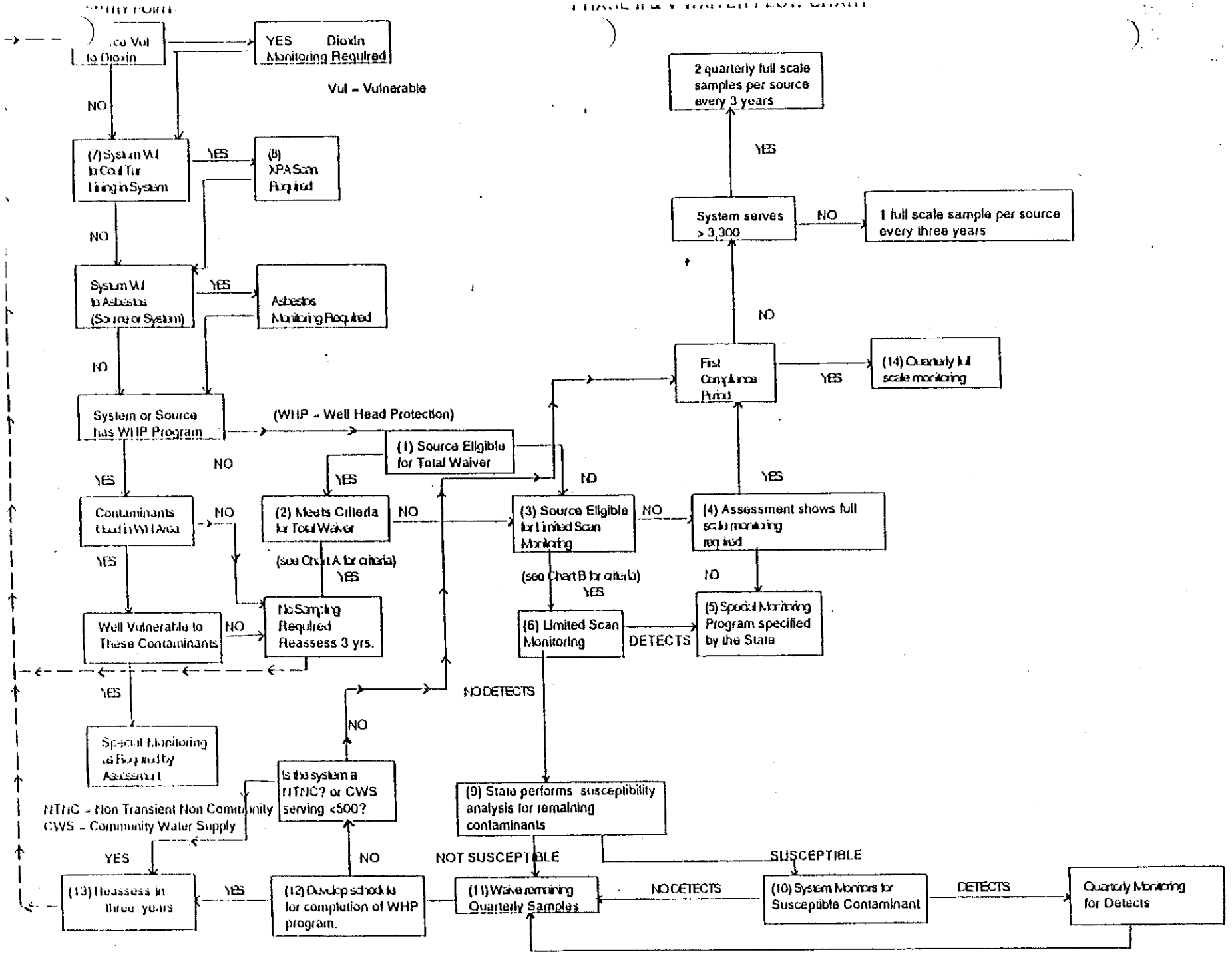
A special state supported monitoring program will be developed for some of the contaminants that are not included in the limited scan monitoring, but are in common use in the state such as diquat, endothall, and glyphosate. This program will also include at some sites all of the remaining contaminants. These sites will be selected on a vulnerability basis.

The ultimate goal of this waiver process is to have public water supplies develop well head protection programs for better management of their ground water resources. Many systems will not have time to develop a program prior to the monitoring requirements of the phase II and V rules. The limited scan monitoring waiver will reduce the cost impact of these rules while a system develops a well head protection program.

WEB:ae

Attachments

cc: Dr. Williams


Vul = Vulnerable
YES Dioxin Monitoring Required
NO
(7) System Vul to Coal Tar Lining in System
YES
(8) XPA Scan Required
NO
System Vul to Asbestos (Source or System)
YES
Asbestos Monitoring Required
NO
System or Source has WHP Program
(WHP = Well Head Protection)
NO
YES
(1) Source Eligible for Total Waiver
YES
NO
Contaminants Used in WHP Area
NO
(2) Meets Criteria for Total Waiver
NO
(3) Source Eligible for Limited Scan Monitoring
NO
(4) Assessment shows full scale monitoring required
YES
YES
(see Chart A for criteria)
YES
(see Chart B for criteria)
YES
NO
Well Vulnerable to These Contaminants
NO
No Sampling Required Reassess 3 yrs.
(6) Limited Scan Monitoring
DETECTS
(5) Special Monitoring Program specified by the State
YES
NO DETECTS
Special Monitoring as Required by Assessment
NO
Is the system a NTNC? or CWS serving <500?
(9) State performs susceptibility analysis for remaining contaminants
NTNC = Non Transient Non Community
CWS = Community Water Supply
YES
NO
NOT SUSCEPTIBLE
SUSCEPTIBLE
(13) Reassess in three years
YES
(12) Develop schedule for completion of WHP program.
(11) Waive remaining Quarterly Samples
NO DETECTS
(10) System Monitors for Susceptible Contaminant
DETECTS
Quarterly Monitoring for Detects
First Compliance Period
YES
(14) Quarterly full scale monitoring
NO
System serves > 3,300
NO
1 full scale sample per source every three years
YES
2 quarterly full scale samples per source every 3 years

WAIVER FLOW CHART DESCRIPTIONS

1. A combination of use and susceptibility must be used to determine if a system qualifies for a total waiver from all monitoring requirements for SOC's in the phase II and V rules.

2. The criteria for a total system waiver may include no use in the total region or no use in the vicinity of the well. See Chart A for criteria.

3. A source may be eligible for limited scan monitoring if the source is properly constructed but there is limited pesticide use in the area. See Chart B for criteria.

4. If a source is not eligible for limited scan monitoring, an additional scan may be required or the full scale monitoring may be dictated.

5. If additional monitoring is required, but not the full scale monitoring, a special monitoring program must be developed.

6. The limited scan monitoring consists of the XAH, XLP, XNP, and XPI scans. The scans will monitor for all of the SOC's in phase II and V except for dibromochloropropane (DBCP), ethylene dibromide (EDB), di(ethylhexyl)adipate, di(ethylhexyl)phalates, diquat, endothall, glyphosate, benzo(a)pyrene (PAH), dioxin and asbestos. To be eligible for waiving the quarterly monitoring, the limited scan sample must be collected during a period of highest exposure. If four quarterly samples were collected, the maximum time between samples could be six months. Therefore, the limited scan sample must be collected during the most vulnerable six month period, which would be from the first of April to the end of September.

   The limited scan monitoring will provide analyses for over 75 contaminants.

7.&8. If coal tar linings are common in the system from tank coatings or main coatings, the XPA scan would be required. This would pick up the phalates and benzo(a)pyrene (PAH).

9. The state will perform a state assessment for the remaining contaminants that are not in the limited scan monitoring. This will include discussions with the Department of Agriculture concerning the nature of the contaminants and their use. The division will then set up a program to do limited monitoring at the most susceptible sites for contaminants that may be common.

10. If there are detects in the state assessment for these remaining contaminants, some systems may be required to do some additional monitoring for ones they are susceptible to.

11. If there are no detects in the limited scan monitoring and the state assessment does not require additional monitoring, the remaining quarterly samples will be waived and the monitoring requirements are satisfied for the three year compliance period.

12. A schedule for a wellhead protection program must be developed to be eligible for repeat limited scan monitoring. If an acceptable schedule is not developed, the system reverts to full scale monitoring.

13. The status of the systems must be reassessed in three years. Basically, go through the waiver process again.

14. Quarterly full scale monitoring, except dioxin, asbestos, and the polynuclear aromatic hydrocarbons (PAH's), is required for these systems. (EDB and DBCP may be included in this monitoring depending on the results of a preliminary monitoring by the state).

CHART A

Criteria Considerations for Total Waivers
Phase II and V Monitoring

1. None of the contaminants are used within a certain region or area.
2. None of the contaminants are used within an arbitrary distance of the well.
3. The well is properly constructed and is in a deep confined aquifer.
4. The well is properly constructed and is in a deep unconfined aquifer. The area would have to be free of potential contaminants for this to apply for a total waiver.

Items that may eliminate a system from a total waiver.

1. Previous positive organics.
2. Surface water source.
3. High nitrates.
4. Karst formation.
5. Improper well construction and isolation.
6. Proximity to high risk sources such as superfund sites and 307 sites.
7. Proximity to chemical manufacturing sites, bulk chemical storage.
8. Shallow unconfined aquifer.
9. Proximity to pesticide mixing sites.
10. Ground water wells under the direct influence of surface water.
11. Previous susceptibility studies indicating vulnerability.

CHART B
(Criteria for Limited Scan Monitoring)

1. Some surface water intakes if there are background data or the intake is not directly influenced by runoff.

2. Properly constructed wells of reasonable depth in an unconfined aquifer.

3. Wells in areas of limited pesticide use.

Items that may require sources to perform monitoring in addition to limited scan monitoring.

1. Intakes on inland streams and rivers.

2. Some previous positive organics. System may be allowed to do limited scan plus monitoring for the previous positive contaminants.

3. Improperly constructed wells.*

4. Wells in Karst areas, unless very deep.

5. High nitrate sources.

6. Proximity to high risk contaminant sources such as superfund and 307 sites.

7. Proximity to bulk storage or manufacture of pesticides or herbicides.

8. Wells under the direct influence of surface water in areas with high pesticide use.

*Wells constructed according to standards would be considered as properly constructed, even if construction standards have changed.

CORRESPONDENCE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

MAR 2 7 1992

WD-17J

James K. Cleland, P.E., Chief
Division of Water Supply
Michigan Department of Public Health
3423 North Logan/Martin L. King Jr., Blvd.
P.O. Box 30195
Lansing, Michigan 48909

Dear Mr. Cleland:

My staff have reviewed Michigan's January 13, 1992 Waiver Policy for Phase II and V. Generally, this proposal follows the regulatory intent more closely than did the original proposal submitted in September of 1991. The following comments on the latest proposal are changes needed to make the document approvable.

The scans used by the State (XAH, XLP, XNP, and XPI) must have a method detection limit equal to the methods identified in the Federal Regulations.

On page two of the proposed Waiver Policy, item IV describes those systems that must do the XPA scan monitoring. **This group of wells also must be required to do a full or partial scan.**

On page two, item V discusses the State undertaking limited monitoring for asbestos and dioxin at the "most vulnerable" sites. **The State must identify how the "most vulnerable" sites are determined. In addition, the State's method for determining vulnerability must be described.**

On page two, the basis for issuing a waiver for pentachlorophenol (was not detected in the National Pesticide Survey) is insufficient. Pentachlorophenol may have limited use, but as a wood preservative, has a widespread distribution. Additional criteria for issuing a waiver for this contaminant must be defined.

The first paragraph of page three states that vulnerable supplies may be required to monitor for diquat, endothall, and glyphosate. Systems with pesticide detections must be required to monitor for these pesticides, unless specific "use" waivers have been granted.

Phase II and V Waiver Flow chart

The flow chart refers to "special monitoring as required by assessment." You must define "special monitoring."

The pesticide monitoring requirements in the flow chart are inaccurate. Pesticide monitoring requires two quarterly samples for systems serving greater than 3,300 people. This inaccuracy in the flow chart must be corrected.

Chart A

Criteria Considerations for Total Waivers

The proposed Waiver Policy should consider the draft Regional guidance by establishing a monitoring waiver review area that factors in the State's developing wellhead protection area delineation criteria and methods.

The terms "certain region" and "arbitrary distance" must be defined. The definitions should comply with the draft Regional Monitoring Waiver guidance.

Item 3 refers to a "deep protected aquifer;" this should be described as a deep confined aquifer.

Item 4 describes "a deep aquifer that has no aquitard above it." The terminology should reflect the acceptable term "unconfined aquifer" in describing this hydrogeological situation.

Although the Federal Regulations do not disallow the issuance of waivers for all the contaminants regulated under the Phase II and Phase V Regulations, Region 5 believes the number of systems qualifying for a "total waiver" would be relatively small.

The State should include a statement from the State Agricultural Department certifying the non-use of certain pesticides and describing the Department's enforcement program, if a State-wide "use" waiver is issued for any pesticide regulated under the Phase II or Phase V Regulations.

Items that may eliminate a system from a total waiver.

This list should include: Proximity to pesticide mixing sites, ground water wells under the direct influence of surface water, and previous susceptibility studies indicating the system is susceptible to contamination.

According to the draft Regional Monitoring Waiver guidance, a surface water system is not eligible for waivers without an initial round of sampling.

Item 8 refers to a "High water table aquifer," this should be modified to a "Shallow unconfined aquifer."

Chart B

Criteria for Limited Scan Monitoring

The term "water table" should be correctly identified as "unconfined."

Those systems located in areas with limited pesticide use should be included in the criteria for limited scan monitoring.

The term "reasonable depth" in item 2 must be defined.

Items that may eliminate a system from limited scan monitoring.

"Karst formations" should be identified as "karst areas."

The criteria for a "very deep" well must be defined.

In item 5, "Most high nitrate sources" must be changed to "High nitrate sources."

Item 6 should be modified to read "Proximity to high risk contaminant sources."

This list should include: ground water wells under the direct influence of surface water in those areas with pesticide use.

The Ground Water Protection Branch compliments the proposed Waiver Policy that has wellhead protection factored in as the ultimate goal of the waiver process.

With some modifications, this proposal for a monitoring waiver program should be acceptable for use in the Phase II and Phase V Regulations. Please keep us informed on the progress of development of Michigan's monitoring waiver program. If you have questions or need additional information, please contact Thomas Matheson, of my staff, at (312) 886-6204.

Sincerely yours,

Edward P. Watters

Edward P. Watters, Chief
Safe Drinking Water Branch

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH

3423 N. LOGAN/MARTIN L. KING JR., BLVD.

P.O. BOX 30195, LANSING, MICHIGAN 48909

Vernice Davis Anthony, Director

May 13, 1992

Mr. Edward P. Watters, Chief
Safe Drinking Water Branch
United States Environmental Protection Agency
Region 5 (WD-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Mr. Watters:

In your letter of March 27, 1992, you addressed several comments concerning the proposed waiver policy that the Michigan Department of Public Health is developing for implementing Phase II and V regulations. The policy can be altered or explained to address these comments. These comments will be addressed as listed in your letter. A revised copy along with your comment letter is enclosed.

Previous policy for determining Method Detection Limits (MDL's) by the Water Analysis Section of the MDPH Laboratory has stressed assurance that detection is valid and that the identity of compounds detected may be clearly confirmed. Newly established MCL's appear to be set at about the same levels dictated by previous MDPH lab policy. The laboratory has reduced MDL values in cases of relatively low MCLs, and will be reporting detection of some compounds below levels allowing confident MS confirmation. Reporting MDL's will be at or below 50% of MCL's for all regulated compounds. All of the experienced analysts in the water lab believe the MDL's cited in EPA methods are artificially low in many cases for use in reporting of unknown samples and cannot be ethically used for reporting field samples even though techniques used are equivalent to those cited in EPA methodology. Also, the MDPH lab will <u>not</u> composite samples. Allowing up to a five sample composite as written, the Phase II rule effectively increases any laboratory MDL by a factor of five. The Michigan approach of meeting at least 50% of the MCL and not allowing composites will provide effective detection.

The public water supplies that must do distribution system monitoring for the XPA scan will also address the monitoring requirements of their sources. A clarification sentence has been added.

Asbestos monitoring will be done on selected systems with corrosive water that have asbestos cement pipe. We estimate analyzing 25 asbestos samples initially and additional ones if needed. The dioxin monitoring will be done in areas near paper mills and in areas near the Midland Dow Chemical plant at vulnerable sources. Again, there will probably be 25 samples initially.

Pentachlorophenol has been added to the limited scan monitoring.

Any system with a pesticide detect will be required to monitor for diquat, endothall, and glyphosate.

The special monitoring as required by assessment would be monitoring for the contaminant that is used in the wellhead area. The monitoring frequency would depend on the time of travel, the location within the wellhead area, the degree of threat, and other factors that would be site specific.

The reference to quarterly sampling for systems greater than 3300 has been corrected.

Chart A

As systems develop wellhead protection areas, the waiver decisions will be concentrated in these areas.

The terms "certain region" and "arbitrary distance" are intentionally vague. These must be site specific determinations. We do not anticipate very many total waivers since we plan to have most systems do limited scan monitoring. The total waivers will be on a case-by-case basis. We will review these decisions with Region V EPA during our mid-year evaluation.

"Deep protected aquifer" has been changed to "deep confined aquifer".

The terminology has been changed to "unconfined aquifer".

We agree with Region V on the number of systems qualifying for a total waiver. The number of systems qualifying for a total waiver would be very small.

The state will work with the Michigan Department of Agriculture to develop a use statement for any contaminants that would qualify for a use waiver. Possible candidates would be dioxin, EDB, DBCP, and di(ethylhexyl)adipate.

Items that may Eliminate a System from a Total Waiver

We have added the items from your letter to the list of items that may eliminate a system from a total waiver.

We do not plan to totally waive any surface water source from monitoring, but we do plan to use the limited scan monitoring on many of the Great Lakes sources.

Item eight has been modified to reflect your comment.

Chart B

Criteria for Limited Scan Monitoring

The first item has been addressed as suggested.

We have added "Wells in areas of limited pesticide use." although you did not specify what limited meant. We will use logic to make this determination.

Reasonable depth could be site specific although a minimum would be at least 25 feet since a casing depth of 25 feet is required on all wells.

Items that may Eliminate a System from Limited Scan Monitoring

"Karst formations" has been changed to "Karst areas".

"Very deep" again is a site specific determination, but will probably relate to wells over 100 feet. This determination on vulnerability will depend on the area, the degree of fracturing, and potential for contamination.

"Most" has been deleted from the nitrate sources.

The word contaminant has been included in item 6.

We have included "Wells under the direct influence of surface water in areas with high pesticide use".

We hope these changes answer your concerns with the Michigan waiver policy for the Phase II and V contaminant monitoring. We will implement this policy for the public water supplies in Michigan. If you have additional comments, please contact us.

Very truly yours,

James K. Cleland, P.E., Chief
Division of Water Supply
Bureau of Environmental
and Occupational Health

JKC:W8E

Enclosures

cc: Dr. Ted Williams

WCD —
Can we make the "rule of thumb"?

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 23 1992

REPLY TO THE ATTENTION OF:
WD-17J

James K. Cleland, P.E., Chief
Division of Water Supply
Michigan Department of Public Health
3423 North Logan/Martin L. King Jr., Blvd.
P.O. Box 30195
Lansing, Michigan 48909

Dear Mr. Cleland:

This is in response to your August 14, 1992 letter requesting approval of Michigan Department of Public Health's (MDPH) revised monitoring waiver program. Prior to granting this approval, the following items must be acknowledged:

1. The MDPH proposes to use method detection limits (MDL) that are greater than those listed in the Federal Register for Phase II and Phase V contaminant screens. Michigan's contention is that the use of a MDL of no greater than one-half the maximum contaminant level (MCL) would be more stringent (i.e., sensitive) than the listed MDL, when composited samples are analyzed.

   Your suggestion is apparently partially supported by 40 CFR. §141(h)(10) of the Phase V portion of the regulations which allows up to five samples to be composited, "...provided that the detection limit of the method used for the analysis is less than one-fifth of the MCL." However, standard analytical practice recommends that MDLs should be no greater than one-third (one-half log unit) of the appropriate value for the analyte and matrix of concern. An MDL of one-fifth to one-tenth the appropriate value is desirable and sufficient in most cases to evaluate whether the concentration of the analyte is approaching the value critical to the decision making process. Using this rule-of-thumb, not only must the MDL for dinoseb be lowered but also those for benzo(a)pyrene, pentachlorophenol, and diethylhexylphthalate. Additional compounds where the value of five time the MDL is greater than 1/3 of the MCL are: endrin, hexachlorobenzene, PAHs, phthalates, and dioxin.

   As noted on the attached table, five contaminants cannot be composited because the MDL exceeds the 1/5 MCL criterion. Since these four contaminants cannot be composited, your proposal to allow a higher MDL for these contaminants would be less stringent than the Federal regulation.

We will therefore approve your proposal to allow MDLs that meet the rule-of-thumb, as described earlier, except for Ethylene Dibromide, Toxaphene, Aldicarb sulfone, PCBs, and Vinyl Chloride. For these contaminants, the listed MDL must be employed. For the remaining contaminants, you must meet the rule-of-thumb.

2. Private laboratories are required to use only United States Environmental Protection Agency (U.S. EPA) approved drinking water methods, and must meet the U.S. EPA MDLs for all compliance monitoring. A statement in the waiver policy indicating the proposed scans and related MDLs will be used only by the State Laboratory, and not by private laboratories will be sufficient.

3. Please describe the procedures the MDPH will follow in making individual waiver decisions. This should conform with the Sampling Waiver Guidance.

4. We have been told that the waiver reporting form is being revised. Please enclose an example of the new form in your response.

We complement you on your thoughtful and insightful proposal, and regret that we were unable to provide response as promptly as we would have liked. I am confident that final approval will be likely upon receipt of the items identified above. If you have questions, please contact me or Thomas Matheson, of the Technical Support Unit, at (312) 886-6204.

Sincerely yours,

Edward P. Watters

Edward P. Watters, Chief
Safe Drinking Water Branch

cc: Elgar Brown, MDPH

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR
DEPARTMENT OF PUBLIC HEALTH
3423 N. LOGAN/MARTIN L. KING JR., BLVD.
P.O. BOX 30195, LANSING, MICHIGAN 48909
Vernice Davis Anthony, Director

November 23, 1992

Mr. Edward P. Watters, Chief
Safe Drinking Water Branch (WD-17J)
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

Subject: Phase II and V Waiver Proposal

Dear Mr. Watters:

In your letter of October 23, 1992, you raised several questions concerning our waiver proposal for the phase II and V contaminant monitoring. We will try to address these as they were listed in your letter.

1. You indicated that "standard analytical practice recommends that MDLs should be no greater than one-third of the appropriate value for the analyte.." We can probably meet this criteria for the phase II and V contaminants that are part of our "limited scan" for the SOCs. We feel your reasoning for some of these criteria is somewhat flawed. For example, the MDL for aldicarb is .0005. If a five sample composite is used, the effective MDL becomes .0025. The MCL for aldicarb is .003. In this case, you are allowing an effective MDL that is 83% of the MCL. This is acceptable, but if the MDL is greater than one-fifth of the MCL, then the given MDL must be used. We believe the "rule of thumb of one-third" can be used in these cases.

   We will try to address your comments contaminant by contaminant:

   Benzo(a)pyrene - not part of our "limited scan waiver".

   Pentachlorophenol - one-third of MCL = .0003. Our MDL is .0005. We will need to lower this MDL slightly.

Diethylhexylphthalate - not part of our "limited scan waiver".

Dinoseb - one-third of the MCL = .0023. Our MDL is .007. We will need to lower this MDL.

Endrin - one-third of the MCL = .0007. Our MDL is .0001. Our lab is O.K.

Hexachlorobenzene - one-third of the MCL = .0003. Our MDL is .0001. Our lab is O.K.

PAHs - not part of the "limited scan waiver".

Phthalates and Dioxin - not part of the "limited scan waiver".

EDB - not part of the "limited scan waiver".

Toxaphene - MDL is .001. Our MDL is .001. Our lab is O.K.

Aldicarb Sulfone - MDL is .0008. Our MDL is .0007. Our lab is O.K.

PCBs - five times the MDL = .0005. Our MDL is .0005. We will need to lower this MDL. We will further investigate occurrence of this contaminant in a statewide study.

Vinyl Chloride - one-third of the MCL = .0007. Our MDL is .0007. Our lab is O.K.

2. A statement indicating the proposed scans and related MDLs will be used only by the State Laboratory will be included in the waiver policy.

3. Our procedure for making the individual waiver decisions was addressed in our flow chart that has been sent to your office. Typically, an engineer will determine if a ground water system is eligible for a "limited scan waiver". If the well is properly constructed and isolated, it very probably will qualify for the waiver. The samples for the SOC analyses are taken within the "six month summer window". If there are no detects, additional monitoring is waived in the first three year period.

ELGAR
BROWN, MDPH

REVISED DRAFT
4/12/93
J. DALESSANDRO

WD-17J

James K. Cleland, P.E., Chief
Division of Water Supply
Michigan Department of Public Health
3423 North Logan/Martin L. King Jr., Blvd.
P.O. Box 30195
Lansing, Michigan 48909

Dear Mr. Cleland:

We have reviewed your November 23, 1992 letter responding to our previous comments on the State's monitoring waiver plans. Region 5 will approve the Michigan Department of Public Health's (MDPH) monitoring waiver program, conditioned on the understanding that MDPH will incorporate the modifications outlined in the November 23, 1992 letter in the State's rule package submittal. These modifications include:

1) Reducing the method detection limit (MDL) for dinoseb from 0.007 milligrams per liter (mg/l) to 0.0023 mg/l.

2) Reducing the MDL for Benzo(a)pyrene from 0.0005 mg/l to 0.00006 mg/l.

3) Reducing the MDL for pentachlorophenol from 0.0005 mg/l to 0.0003 mg/l.

4) Reducing the MDL for Di(2-ethylhexyl)phthalate from 0.005 mg/l to 0.0013 mg/l.

The MDPH intends to conduct "limited scan" pesticide monitoring for sources that are constructed according to State codes, but may have some susceptibility to contamination based on pesticide use, or a lack of available data to accurately document the non-existence of a pesticide. The results provided by the scans will be used to support the State's decisions regarding approval of monitoring waivers. Waivers will not be approved for contaminants detected by the scans.

Use of the scans is intended to increase the State's ability to award waivers from actual compliance monitoring. However, improved efficiency of the laboratory resources requires the scans to use method detection limits (MDL) greater than those specified by the Federal regulations for compliance samples. To achieve this goal, the MDPH has proposed using MDLs up to 50% of the Maximum Contaminant Level (MCL) for the limited scans and disallowing the use of composite samples.

The MDPH justified this proposal by claiming that the composite sample analyses permitted under 40 CFR. §141(h)(10) results in an "effective MDL" for uncomposited samples that is five times greater than the MDLs specified in the rule. For several parameters, this "effective MDL" exceeds 50% of the MCL.

The rationale for the MDPH's proposal has been discussed with our Quality Assurance Section. While they agree with the technical basis of the proposal, "standard analytical practice recommends that MDLs should be no greater than one-third of the appropriate value for the analyte and matrix of concern" (i.e., the MCL). To comply with this rule-of-thumb, the MDLs for Dinoseb, Benzo(a)pyrene, Pentachlorophenol and Di(ethylhexyl)phthalate must be reduced to the limits specified above. Other compounds that are included in the scans where the "effective MDL" exceeds 1/3 of the MCL include Carbofuran, Dalapon, Methoxychlor, Oxamyl (Vydate), and 1,2,4-Trichlorobenzene. However, the MDPH has previously agreed to employ acceptable MDLs for these parameters.

Aldicarb sulfone, Ethylene dibromide (EDB), Polychlorinated biphenyls (PCB), Toxaphene, and Vinyl Chloride cannot be composited because the resulting "effective MDLs" will exceed their respective MCLs. Since these analyses may not be composited, the MDPH's proposal to allow a higher MDL for these contaminants would be less stringent than the Federal regulation.

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

TO: Elgar Brown
Water Supply Division - BEOH

DATE: 04/13/93

FROM: Dr. Williams. Ph.D., Chief
Water Analysis Section - BIDC

SUBJECT: Detection Limits

John Snyder, Senior Chemist, has reviewed the MDL data for the proposed monitoring methods regarding the attached letter. He reports that we will be able to meet requirements for dinoseb, pentachlorophenol, and di(2-ethylhexyl)-phthalate. However, although EPA Method 525.1 is approved for Benzo(a)pyrene testing, the method detection limit is 0.0001 mg/L. Our research indicates this to be the minimum level we can obtain with the method.

It is my understanding that benzo(a)pyrene (PNA) testing was to apply only to systems employing coal tar linings,and that PNA's will not be reported under limited SOC monitoring. I do not understand how this is related to the general waiver proposals you have discussed.

Assuming that PNA testing is limited, we will be able to reduce the MDL by:

1. The new GC/ITD system on order should increase sensitivity by a factor of about 10, projected 525.1 MDL~0.00002 mg/L.

2. It appears that new HPLC equipment on order would allow us to develop yet another scan for PNA (EPA Method 550.1) with MDL~0.00002 mg/L.

We are beginning to reach a consensus in the laboratory regarding EPA's use of what we believe are "minimum possible" method detection limits. While we will be able to quote these limits as determined according to EPA protocol, we consider them to be valid only in the absence of any sample related interference and with all method related interferences related to reagents, column conditions, etc. at an absolute minimum. We must then deal with how to apply these in a realistic manner to sample reporting and how these relate to a "practical quantitation limit" (PQL). This is something we need to discuss and review with those in EPA that you deal with.

cc: Dr. Martin
Sandy
Albert
John Snyder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

Mr. Elgar Brown, P.E.
Department OF Public Health
Division Of Water Supply

Fax No: (517) 335-8298
No. Of Pages: 2

Dear Mr. Brown:

As part of the final approval of the phase 2 & 5 waiver program, we have put together the attached table. This table lists the MCLs and MDls as specified by the Federal regulations, 5 sample composited MDL (5xMDL),the proposed 50% MCL, and a column indicating whether 50% MCL is less than the effective MDL (5xMDL).

We need to know Michigan's proposed MDL for the contaminants that are part of the limited scan (indicated by *) and also their 50% MCL is not less than 5xMDL (indicated by a NO on the fifth column).

It is our intention to have the final approval letter by early part of next week. If you have any questions, please give me a call at (312) 886-6171.

Sincerely,

Sahba Rouhani

MAXIMUM CONTAMINANT LEVELS & METH

MICHIGAN'S PROPOSAL OF

COMPARISON: is Michigan's MDL (50%

CONTAMINANTS	MCL	MDL	3 sample composited MDL	50% MCL	50%MCL < SWTR	MICHIGAN'S PROPOSED MDL
ORGANIC CHEMICALS	mg/L**	mg/L**	mg/L**	mg/L**		
Acrylamide	None	None				
* Adipates [Di(ethylhexyl)adipate] *	0.5	0.0006	0.00300	0.25000	NO	.005
* Alachlor	0.002	0.0002	0.00100	0.00100	NO	
* Aldicarb	0.003	0.0005	0.00250	0.00150	YES	
* Aldicarb sulfone	0.002	0.0008	0.00400	0.00100	YES	
* Aldicarb sulfoxide	0.004	0.0005	0.00250	0.00200	YES	
* Atrazine	0.003	0.0001	0.00050	0.00150	NO	.001
Benzene	0.005	0.0005	0.00250	0.00250	NO	
* Carbofuran	0.04	0.0009	0.00450	0.02000	NO	
Carbon Tetrachloride	0.005	0.0005	0.00250	0.00250	NO	
Chlordane	0.002	0.0002	0.00100	0.00100	NO	
* 2,4 – D	0.07	0.0001	0.00050	0.03500	NO	.005
* Dalapon *	0.2	0.0010	0.00500	0.10000	NO	
Dibromochloropropane (DBCP)	0.0002	0.0000	0.00010	0.00010	NO	
o – Dichlorobenzene	0.6	0.0005	0.00250	0.30000	NO	
p – Dichlorobenzene	0.075	0.0005	0.00250	0.03750	NO	
1,2 – Dichloroethane	0.005	0.0005	0.00250	0.00250	NO	
1,1 – Dichloroethylene	0.007	0.0005	0.00250	0.00350	NO	
cis – 1,2 – Dichloroethylene	0.07	0.0005	0.00250	0.03500	NO	
trans – 1,2 – Dichloroethylene	0.1	0.0005	0.00250	0.05000	NO	
Dichloromethane (Methylene chloride) *	0.005	0.0005	0.00250	0.00250	NO	
1,2 – Dichloropropane	0.005	0.0005	0.00250	0.00250	NO	
* Dinoseb *	0.007	0.0002	0.00100	0.00350	NO	.00014
Diquat *	0.02	0.0004	0.00200	0.01000	NO	
Endothall *	0.1	0.0090	0.04500	0.05000	NO	
* Endrin *	0.002	0.0000	0.00005	0.00100	NO	.0001
Epichlorohydrin	None	None	None			
Ethylbenzene	0.7	0.0005	0.00250	0.35000	NO	
Ethylene dibromide (EDB)	0.00005	0.00001	0.00005	0.00003	YES	
Glyphosate *	0.7	0.00600	0.03000	0.35000	NO	
* Heptachlor	0.0004	0.00004	0.00020	0.00020	NO	
* Heptachlor epoxide	0.0002	0.00002	0.00010	0.00010	NO	
* Hexachlorobenzene *	0.001	0.00010	0.00050	0.00050	NO	
* Hexachlorocyclopentadiene (HHX) *	0.05	0.00010	0.00050	0.02500	NO	.001
* Lindane	0.0002	0.00002	0.00010	0.00010	NO	
* Methoxychlor	0.04	0.00010	0.00050	0.02000	NO	
Monochlorobenzene	0.1	0.00050	0.00250	0.05000	NO	
* Oxamyl (Vydate) *	0.2	0.00200	0.01000	0.10000	NO	
* PAHs [Benzo(a)pyrene] *	0.0002	0.00002	0.00010	0.00010	NO	.0005
Pentachlorophenol	0.001	0.00004	0.00020	0.00050	NO	.00002
Phthalates [Di(ethylhexyl)phthalate] *	0.004	0.00060	0.00300	0.00200	YES	.005
* Picloram *	0.5	0.00010	0.00050	0.25000	NO	.02
Polychlorinated biphenyls (PCB)	0.0005	0.00010	0.00050	0.00025	YES	
* Simazine *	0.004	0.00007	0.00035	0.00200	NO	.0005
Styrene	0.1	0.00050	0.00250	0.05000	NO	
2,3,7,8 – TCDD (Dioxin) *	0.00000	0.00000	0.00000	0.00000	YES	
Tetrachloroethylene	0.005	0.00050	0.00250	0.00250	NO	
Toluene	1	0.00050	0.00250	0.50000	NO	
* Toxaphene	0.003	0.00100	0.00500	0.00150	YES	
* 2,4,5 – TP (Silvex)	0.05	0.00020	0.00100	0.02500	NO	.005
* 1,2,4 – Trichlorobenzene *	0.009	0.00050	0.00250	0.00450	NO	
Trichloroethylene (TCE)	0.005	0.00050	0.00250	0.00250	NO	
1,1,1 – Trichloroethane	0.2	0.00050	0.00250	0.10000	NO	
1,1,2 – Trichloroethane *	0.005	0.00050	0.00250	0.00250	NO	
Vinyl Chloride	0.002	0.00050	0.00250	0.00100	YES	
Xylenes (total)	10	0.00050	0.00250	5.00000	NO	

* LIMITED SCAN CONTAMINANTS

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH

3423 N. LOGAN/MARTIN L. KING JR., BLVD.
P.O. BOX 30195, LANSING, MICHIGAN 48909

Vernice Davis Anthony, Director

DATE: May 26, 1993

TO: Sahba Rouhani
U.S. EPA Region 5
Chicago, Illinois

FROM: Wm. Elgar Brown
Michigan Dept. of Public Health
Lansing, Michigan

SUBJECT: Phase II/V Contaminants

In your recent fax and our telephone conversation of May 26, you requested that we list the phase II/V contaminants that are not covered in our "limited scan monitoring". The eleven contaminants that are not in these scans are:

asbestos
dioxin
PCB
EDB
DBCP
glyphosate
diquat
endothall
dalapon
di(ethylhexyl)adipate
di(ethylhexyl)phthalate

We will contract with a private lab to have a limited number of asbestos and dioxin samples analyzed. Our lab will be including the PCB analysis in the limited scan monitoring in the near future. We are requiring EBD and DBCP on any VOC positive samples. Glyphosate, diquat, endothall, and dalapon will be required on vulnerable ground water sources plus we may do some state-wide susceptibility monitoring. The adipates and phthalates will be done on a limited number of samples on a state-wide basis.

We hope this answers your questions, and we look forward to approval of our waiver program.

WEB:ae

REVISED WAIVER FORM AND FLOW CHART

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

MEMORANDUM

DATE: May 25, 1993

TO: Water Supply Engineers

FROM: Wm. Elgar Brown WEB

SUBJECT: Waiver Form and Cyanide Monitoring

Attached is the revised waiver form that is to be used for the community water supply waivers for the phase II/V monitoring. This was discussed at the last staff meeting. Make copies as needed. I would like to discuss any candidates that you feel qualify for total waivers prior to the waiver being issued.

Also attached is a copy of the letter from EPA Region 5 that gives a waiver for cyanide, glyphosate, and nitrite monitoring based on a chlorine residual being present at the point of entry. If you have any questions concerning these items, please contact me.

WEB:ae

Attachments

cc: Division of Upper Peninsula
cc: Nathan Foote
cc: Bob Salkeld

PHASE II AND V VULNERABILITY ASSESSMENT FORM

System Name: _____

WSSN: _____

Population Served: _____

Number of Wells or Points-of-Entry: _____

Instructions: Use this form for interim vulnerability assessments until a wellhead protection area has been evaluated. If a wellhead program exists, refer to the contaminant source inventory for monitoring guidance.

	Well No.	Well No.	Well No.	Well No.
Source Code				
Well eligible for a Total Waiver (in accordance with guidance)				
Potential Pesticide Vulnerability (some uses in the area; well meets construction standards) Analyze limited SOC scans				
Probable Pesticide Vulnerability (e.g., inland rivers) No Waiver				
VOC vulnerability assessment completed and system eligible for waiver				
VOC gasoline derivatives detected (EDB monitoring required)				

Is there a chlorine residual at point-of entry? Yes ☐ No ☐

Has A.C. pipe been used in the distribution system? Yes ☐ No ☐

Have coal tar linings been used in the system? (Cast iron installed prior to 1970) Yes ☐ No ☐

I certify that the above information, to the best of my knowledge, is true and accurate.

_____ _____ _____

Signature Title Date

_____ _____

Printed Name Supv. Initials

WEV

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

WD-17J

MAY 05 1993

James K. Cleland, P.E.
Division of Water Supply
Bureau of Environmental and Occupational Health
Department of Public Health
3423 N. Logan/Martin L. King Jr. Blvd.
P.O. Box 30195
Lansing, Michigan 48909

RE: Susceptibility Waivers for Chlorinated Water Supplies

Dear Mr. Cleland:

This is in response to your April 6, 1993, letter informing us of a discussion regarding waivers for chlorinated water supplies that occurred at the Drinking Water Laboratory Certification Workshop of March 30, 1993. Your letter stated that a memorandum concerning State-Wide waivers would be sent to all Regional Offices of the United States Environmental Protection Agency.

As of this writing, I am not aware of this memorandum. However, my staff has consulted with several individuals within the Office of Ground Water and Drinking Water, and concluded that susceptibility waivers for certain contaminants will be acceptable.

The eligible contaminants include cyanide, nitrite and glyphosate. We have been informed that these contaminants are readily oxidized in the presence of chlorine, and therefore, would not be detectable in water supplies that maintain a chlorine residual. Although similar reactions are expected to occur in the presence of ozone or chloramines, the Region has not obtained sufficient evidence to support this conclusion.

Barring the receipt of conflicting information, Region 5 will respect our States' approval of susceptibility waivers for cyanide and glyphosate based on the public water supply's (PWS) ability to maintain a detectable chlorine residual within the distribution system. The PWSs would have to maintain appropriate documentation, such as daily residual logs, to support the waivers.

Waivers from the <u>initial</u> nitrite monitoring will require a revision of 141.23(e). However, since repeat monitoring requirements (141.23(e)(2)) are to be established by the State, maintenance of a detectable chlorine residual will be adequate to waive <u>repeat</u> monitoring.

Your letter included endothall as one of the contaminants that could not be detected in a chlorinated water supply. We have not located any information to support this request, so **maintenance of a chlorine residual will not provide sufficient justification to waive monitoring for endothall.**

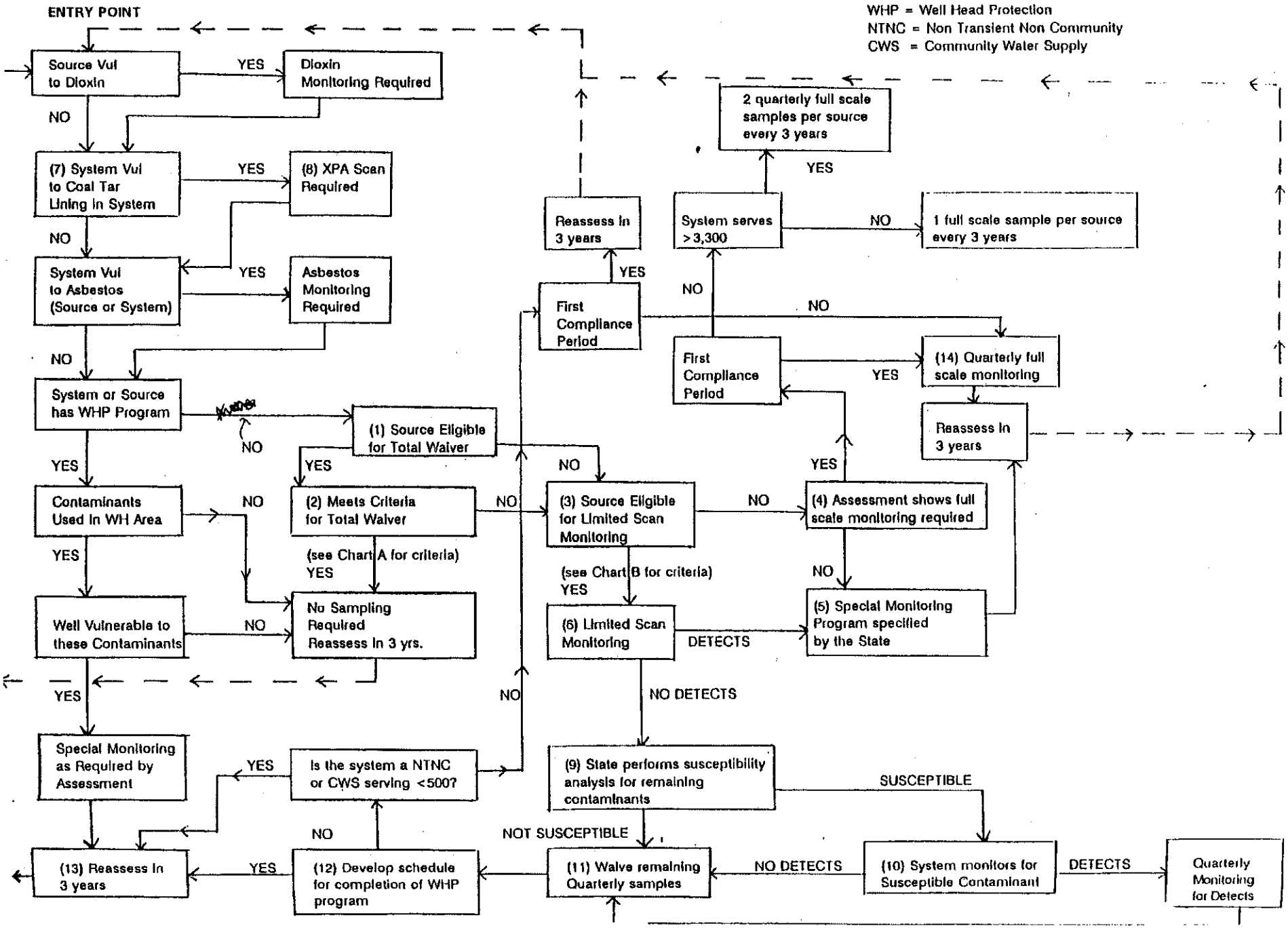
Please contact John Dalessandro at (312) 886-6202 with any questions, comments, suggestions, or additional information.

Sincerely yours,

Charlene J. Denys, Chief
Drinking Water Section

PHASE II & V WAIVER FLOW CHART

Vul = Vulnerable
WHP = Well Head Protection
NTNC = Non Transient Non Community
CWS = Community Water Supply



Appendix E

Guidance Memos from US EPA Region 5

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
INTERNET: http://www.deq.state.mi.us
RUSSELL J. HARDING, Director

REPLY TO:
DRINKING WATER & RADIOI
PROTECTION DIVISION
3423 N MARTIN L KING JR B
PO BOX 30630
LANSING MI 48909-8130

February 10, 1997

Mr. Roman Vitale
City of Warren
12821 Stephens
Warren, Michigan 48093

WSSN: 6900

Dear Mr. Vitale:

SUBJECT: Individual Community Compliance Determinations with the Total Coliform Rule

This letter is to notify you of a change in the way we must determine compliance with the Total Coliform Rule for customer supplies of the Detroit Water and Sewerage Department (DWSD). In the past, coliform monitoring results from throughout the DWSD water supply were combined prior to calculating whether five percent of the results were coliform positive or if any results indicated an isolated problem. **Beginning with March of 1997, compliance will be determined on an individual community basis rather than system-wide.**

This change means customer supplies collecting less than forty (40) samples may have no more than one coliform positive analysis in a month. A second coliform positive analysis will cause a maximum contaminant level (MCL) violation, with the requisite public notification and appropriate response actions. For those customers collecting more than forty (40) samples each month, no more than five percent of the results may be coliform positive.

This change in the compliance determination was prompted by recent discussions with the U.S. Environmental Protection Agency (U.S. EPA). This issue was presented to DWSD customer supplies at the January 29, 1997, meeting at the Novi Civic Center.

You should recognize that this action will require customers of DWSD to take a more active role in the coliform monitoring program. As such, it is imperative that customer supplies have a complete and up-to-date sample site plan. The plan must identify routine bacteriological sampling locations, along with their corresponding repeat sample locations. The repeat sample locations must be within five service connections, both upstream and downstream from the routine sampling location. Ideally, these sites will be located on a general plan of the system. As a minimum, the addresses of the sampling sites must be listed. The sample site plan must also include the sampling frequency, sampling technique, and a notification protocol. In the future, public notification will likely be confined to an individual customer supply, and will have to be initiated by the customer, not DWSD. A form is enclosed to assist you with completing a sample site plan. Please submit a copy of an up-to-date sample site plan for your water system for our review and future reference. You may wish to review your sampling sites with DWSD staff prior to updating this plan.

You should know that the present number of routine bacteriological samples required for each DWSD customer has been reduced based on a "consecutive system approach." Information regarding the required number of samples for each community is enclosed. There is no change anticipated in these reduced numbers. However, there may be advantages to voluntarily increasing the number of routine samples because compliance will be based on individual community results.

Another requirement you should be familiar with is the need to have a minimum of five routine samples collected in the month following a coliform positive analysis. Only those customer supplies now having less than five routine samples collected each month will be so affected. This requirement for five samples in the subsequent month is in addition to the required repeat sampling conducted within 24 hours of receiving a positive analysis. If a system fails to have the required number of routine or repeat samples collected, monitoring violations will occur. Public notification is also required for monitoring violations. Although DWSD staff may be collecting your samples, it will be the responsibility of each individual community to assure that monitoring is properly conducted and to issue any required public notices.

We understand that this decision represents a significant change in responsibility for DWSD customers. We have enclosed an article that summarizes the Total Coliform Rule for your information. It may assist you in completing the sample site plan and serve as a valuable resource for the future. **We cannot emphasize enough the importance of proper sample site selection.** A little extra planning and precaution in these matters should minimize problems that may result in public notification and concern.

If you have any questions, please contact Mr. Robert Green at 517-335-8043, Mr. Bryce Feighner at 517-335-9421, or me.

Sincerely,

Richard E Benzie

Richard E. Benzie, P.E.
Supervising District Engineer
Community Water Supply Section
Drinking Water and Radiological
Protection Division
517-335-8323

REB:im

Enclosure

cc: Ms. Judy Huddleston, Detroit Water and Sewerage Department
Macomb County Health Department

DWSD Customer Supply Bacteriological Monitoring Requirements

Oakland County

WSSN	Supply	Population	Current # samples collected/week	20% of chart value	Minimum # samples required/week	Minimum # samples required/month
0325	Rochester Hills	61,281	4	14	4	16
0630	Berkley	16,960	5	3	1	4
0690	Beverly Hills	10,610	15/month	2	1	4
0715	Bingham Farms	817	10/month	0.2	1	4
0730	Birmingham	19,997	25/month	4	1	4
0775	Bloomfield Hills	4,288	1	1	1	4
0790	Bloomfield Township	41,773	3	10	3	12
1440	Clawson	13,874	5	3	1	4
1573	Commerce Township	3,500	1	0.8	1	4
2230	Farmington	10,132	1	2	1	4
2240	Farmington Hills	78,038	5	16	4	16
2280	Ferndale	25,084	2	6	2	8
3100	Hazel Park	20,051	1	4	1	4
3310	Huntington Woods	6,419	15/month	1.4	1	4
3595	Keego Harbor	2,932	1	0.6	1	4
3740	Lake Orion	3,057	1	0.6	1	4
3800	Lathrup Village	4,329	15/month	1	1	4
4000	Madison Heights	32,196	2	6	2	8
4870	Novi	32,998	10/month	6	2	8
4880	Oak Park	30,613	2	6	2	8
5031	Orchard Lake Village	426	1	0.2	1	4
5035	Orion Township	6,649	1	1.4	1	4
5390	Pleasant Ridge	2,775	15/month	0.6	1	4
5440	Pontiac	71,166	6	16	4	16
5450	Auburn Hills	17,076	1	3	1	4
5830	Royal Oak	65,410	10	14	4	16
5840	Royal Oak Township	5,011	1	1.2	1	4
6160	Southfield	75,118	45/month	16	4	16
6530	Sylvan Lake	1,884	1	0.4	1	4
6690	Troy	77,410	4	16	4	16
6875	Walled Lake	6,278	1	1.4	1	4
6975	West Bloomfield Twp.	29,850	3	6	2	8

JUN 03 1994

WD-17C

MEMORANDUM

SUBJECT: Interim Trigger Levels

FROM: Dale S. Bryson
Director, Water Division
ORIGINAL SIGNED BY
DALE S. BRYSON

TO: James R. Elder, Director
Office of Ground Water and Drinking Water (4602)

As you know, all Regions are struggling with the problem of how to work with the Method Detection Limits listed in Section 141.24 (h)(18) of the drinking water regulations. We need to avoid having water systems take four quarterly samples, when such sampling is a regulatory artifact that is scheduled to be fixed. The Headquarters guidance of December 16, 1993, was a step in the right direction, but it didn't quite solve the problem for either the States or the public water supplies.

Since a regulatory fix is a long way off, but States have to tell their systems now whether or not they need to collect three more quarterly samples, we have worked with our Environmental Sciences Division Quality Assurance Section, and our State laboratories and program staff, to develop a workable interim solution. The attachment is the solution the States are going to use in Region 5. Although it doesn't conform exactly to the existing regulations, it is protective of public health, and will serve the purpose of also controlling costs, while we wait for a regulation fix. Like the Priorities Guidance, this approach helps to ensure that resources are expended where risks are highest. The approach would also be consistent with the cost-benefit philosophy of Senate Bill 2019. Our States understand that this is interim implementation guidance and that their State regulations must be as stringent as the Federal regulations.

I just wanted to let you know how we're handling this situation on an interim basis.

Attachment

bcc: Edward Wetters
[redacted] Denys
George Schupp
Mike Muse
Connie Bosma

Region 5 - 05/27/94

Phases II and V SDWA Parameter	USEPA MCL mg/l	USEPA SOC MDL mg/l	INTERIM TRIGGER LEVELS mg/l	Notes
alachlor	.002	.0002	.0002	Note 1
simazine	.004	.00007	.0004	Note 1
carbofuran	.04	.0009	.004	Note 1
oxamyl (vydate)	.2	.002	.02	Note 1
atrazine	.003	.0001	.0003	Note 1
endrin	.002	.00001	.0002	Note 1
chlordane	.002	.0002	.000	Note 1
heptachlor	.0004	.00004	.00004	Note 1
heptachlor epoxide	.0002	.00002	.00002	Note 1
hexachlorobenzene	.001	.0001	.0001	Note 1
lindane (gamma-BHC)	.0002	.00002	.00002	Note 1
methoxychlor	.04	.0001	.004	Note 1
toxaphene	.003	.001	.001	Note 2
2,4-D	.07	.0001	.007	Note 1
2,4,5-TP (Silvex)	.05	.0002	.005	Note 1
dinoseb	.007	.0002	.0007	Note 1
dalapon	.2	.001	.02	Note 1
picloram (Tordon)	.5	.0001	.05	Note 1
diquat	.02	.0004	.002	Note 1
endothall	.1	.009	.01	Note 1
glyphosate (Roundup)	.7	.006	.07	Note 1
di(2-ethylhexyl)adipate	.4	.0006	.04	Note 1
di(2-ethylhexyl)phthalate	.006	.0006	.0006	Note 1
hexachlorocyclopentadiene	.05	.0001	.005	Note 1
benzo(a)pyrene	.0002	.00002	.00002	Note 1
pentachlorophenol	.001	.00004	.0001	Note 1
PCBs	.0005	.0001	.0004	Note 3
2,3,7,8-TCDD	$3x10^{-8}$	$5x10^{-9}$	$5x10^{-9}$	Note 2
ethylene dibromide	$5x10^{-5}$	$1x10^{-5}$	$4x10^{-5}$	Note 3
dibromochloropropane	.0002	.00002	.00002	Note 1

Note 1: Region 5 Interim Trigger Level (ITL) set at 0.1 x MCL.
Note 2: Region 5 ITL set at current regulatory monitoring trigger level: 0.1 x MCL value too low for labs to reliably achieve.
Note 3: Region 5 ITL set at 80% (0.8x) current regulatory MCL.

Appendix F

Letter Concerning the LCR from the Michigan Attorney General

STATE OF MICHIGAN
DEPARTMENT OF ATTORNEY GENERAL

5TH FLOOR SOUTH, CONSTITUTION HALL
525 WEST ALLEGAN STREET
LANSING, MICHIGAN 48933

MIKE COX
ATTORNEY GENERAL

January 6, 2003

Ms. Charlene Denys, Chief
Safe Drinking Water Branch
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (WD-15J)
Chicago, Illinois 60604-3590

Dear Ms. Denys:

Re: Lead Copper Rule Minor Revisions Implementation

By letter dated July 18, 2002, the Michigan Department of Environmental Quality ("MDEQ") requested a written explanation from the United States Environmental Protection Agency ("USEPA") for "interpreting a sampling "site" under Title 40 of the Code of Federal Regulations (CFR) 141.86e, as a faucet" under the Lead and Copper Rule Minor Revisions ("LCRMR"). The difference in the USEPA's and MDEQ's definition of a "site" has impacted the MDEQ's ability to obtain primacy over LCRMR implementation. Specifically, the USEPA requested this office to "determine the enforceability of the MDEQ's regulatory language to enforce the EPA's interpretation that a "site" is a "faucet." Therefore, an understanding of the USEPA's position is of significance to the MDEQ's program.

Through a letter dated August 31, 2000 and an e-mail from Rich Overmyer dated October 11, 2000 from Flint Watt, the MDEQ made clear its disagreement with the USEPA's new interpretation of site without the use of a rule change. Additionally, several passages were presented that support the MDEQ's interpretation of site as a building. I have once again included documentation of this nature for USEPA's review.

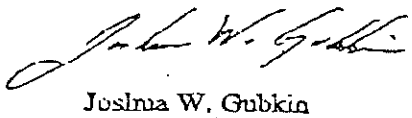
In response to the MDEQ's July 18, 2002 request, the USEPA via e-mail reiterated the new preamble language that prompted this controversy. However, no reference to statutory language or rules was supplied to support the contention that a site is a faucet. In effect, it appears that the USEPA has attempted to alter the definitions without the formal rulemaking process required to do so. The USEPA having not supplied any information to support its position and contradict the statutory language indicating a site is a building presented by the MDEQ, the MDEQ must remain steadfast in its position.

Therefore, it is my opinion that the MDEQ has authority equivalent to the USEPA's to enforce the provisions of the LCRMR. Further, it appears that the USEPA's authority is limited to that provided by statute and that the statutory language only supports enforcement of a site as

a building and not as a faucet. Although the MDEQ may not have the authority to enforce the USEPA's interpretation of site as a faucet, as provided in the recently altered preamble language, it would appear the USEPA does not have such authority either.

The comments herein represent the advice of the author and not the opinion of the Attorney General.

Very truly yours,



Joshua W. Gubkin
Assistant Attorney General
Environment, Natural Resources,
and Agriculture Division
(517) 373-7540

JWG/pjb
c: Jim Cleland, MDEQ

S: NR/AC/attorneys/gubkin/epa water letter

Appendix G

Primacy Extension Agreement between Michigan and EPA Region 5

PUBLIC WATER SYSTEM SUPERVISION PROGRAM
PRIMACY EXTENSION AGREEMENT
BETWEEN
THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AND
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 5

This document records the terms of a Public Water System Supervision Program Primacy Extension Agreement (Agreement) between the Michigan Department of Environmental Quality (State) and the United States Environmental Protection Agency, Region 5 (EPA), for the Lead and Copper Rule Minor Revisions (LCRMR) published in the January 12, 2000 *Federal Register*, Volume 65, No. 8, pages 2003-2015.

The Agreement will be effective through January 12, 2004, or until the State receives primacy, whichever occurs first.

Until the State receives primacy for the LCRMR, general implementation activities performed under Title 40 of the Code of Federal Regulations (40 CFR) §142.12(b)(3)(i) through (vi) will be shared as outlined in Part I: General Implementation Activities, below.

LCRMR Provision	Until the State receives primacy for the LCRMR, implementation for the following provisions will be the responsibility of:	
	State	EPA
Part I: General Implementation Activities		
Activities to be carried out by the State:		
Notify public water systems (PWSs) within 60 days of signing this agreement of the requirements of the LCRMR.	X	
Identify other State agencies that should receive copies of the LCRMR. Provide EPA, Region 5, with the names, addresses, and phone numbers of contacts to distribute the LCRMR to within those agencies within 60 days of signing this agreement.	X	
Train State staff and PWSs on the requirements of the LCRMR.	X	
Devise a tracking system for PWSs' monitoring and reporting performed pursuant to the LCRMR.	X	
Issue notices of violation to PWSs that fail to meet requirements of the LCRMR, except for monitoring violations at nontransient noncommunity water systems (NTNCWSs) that consist of fewer than five buildings and that collect at least one sample per building.	X	
Provide a copy of the LCRMR in response to public inquiries.	X	
Report LCRMR violation and enforcement information to the Safe Drinking Water Information System (SDWIS) as required.	X	
Activities to be carried out by EPA, Region 5		
Provide training to State staff and, when possible, to water system operators.		X
Coordinate with water associations to increase awareness of requirements.		X
Assist with public outreach efforts to inform and educate PWSs.		X
Prepare guidance as needed, or forward national guidance to the States.		X
Keep the State informed of SDWIS reporting requirements during development and implementation.		X

LCRMR Provision	Until the State receives primacy for the LCRMR, implementation for the following provisions will be the responsibility of:	
	State	EPA
Provide compliance assistance.		X
Notify the State of all federal enforcement actions.		X
Part II: Oversight Responsibilities for LCRMR Provisions that Must Be Implemented by April 11, 2000		
§141.81 Demonstration of Optimal Corrosion Control		
(b)(1) systems Ensure systems that have installed corrosion control treatment (CCT) and are not required to conduct water quality parameter monitoring continue to properly operate and maintain CCT. Maintain records of system requirements.	X	
Determine if these systems should conduct additional requirements to ensure CCT is maintained. Maintain records of system requirements.	X	
(b)(2) systems	Not applicable	
(b)(3) systems All five of Michigan's §141.81(b)(3) systems are on reduced triennial monitoring. If a system's lead results indicate that the difference between the 90th percentile lead level and the source water lead level exceeds the Practical Quantitation Level (PQL) of 5 parts per billion (ppb) during its triennial monitoring, then the system must do additional monitoring the following year during the same summer month period as the first samples that exceeded. The number of samples for the additional round of monitoring will be the same number as the prior set of monitoring data (i.e., the number of samples under the reduced monitoring, which for these five large systems is 50 samples). If the additional monitoring also exceeds the PQL of 5 ppb, then the system must undergo the corrosion control study, as prescribed by the State. NOTE: All lead levels measured between the maximum detection limit (MDL) and the PQL must be either reported as measured or they can be reported as one-half the PQL (2.5 ppb). All levels below the lead MDL must be reported as zero (§141.89[a][3]). It is understood that the MDL for lead is unique to the laboratory conducting the lead analysis.	X	
§§141.84 and 141.90(e) Lead Service Line (LSL) Replacement and Reporting Requirements		
Ensure that systems subject to LSL replacement requirements: Replace portion of the LSL that they own and maintain records that document what portions of the LSL that they own. Make an offer to the property owner to replace the privately-owned portion of the LSL. Maintain records of system requirements.	X	

LCRMR Provision	Until the State receives primacy for the LCRMR, implementation for the following provisions will be the responsibility of:	
	State	EPA
Ensure that systems that conduct partial LSL replacement: Notify residents at least 45 days before partial replacement that lead levels may increase temporarily following the replacement and provide guidance on measures they can take to minimize exposure to lead. *(Primacy Agency can allow shorter notification if replacement is done in conjuction with emergency repairs.)* Collect at water utility expense a post-replacement sample that is representative of the lead content of water in the service line within 72 hours of completing the partial LSL replacement. Notify residents of analytical results by mail or posting within three business days of receiving the results. Submit to the State the results of LSL samples following partial LSL replacement. Determine need to submit additional information to verify system completed the above requirements and maintained records of system requirements.	X	
§§141.86 and 141.90(a) Lead and Copper Tap Monitoring and Reporting Requirements		
Ensure that systems with an insufficient number of Tier 1, 2, or 3 sites, use representative sites to complete their sampling pools, except NTNCWSs with fewer than five buildings. Ensure that NTNCWSs with fewer than five buildings that have an insufficient number of Tier 1, 2, or 3 sites, sample all taps in the building or at least the required minimum number of samples that are representative of its drinking water, regardless of the number of buildings that make up the NTNCWS. No less than five samples would be taken. The State will only initiate enforcement if the system collects less than one sample per building. Obtain a statement from the Michigan Attorney General, as directed by EPA, Region 5, in their letter to Mr. James K. Cleland, Drinking Water and Radiological Protection Division (DWRPD), dated July 2, 2001, to determine the enforceability of the State's regulatory language to enforce the EPA's interpretation that a "site" is a "faucet." Maintain records of system requirements.	X	
Enforce the minimum chart number of samples required at NTNCWSs that consist of fewer than five buildings and that collect at least one sample per building, but do not collect the required minimum chart number of samples that are representative of its drinking water.		X
Refer to EPA, Region 5, for enforcement NTNCWSs that consist of fewer than five buildings and that collect at least one sample per building, but do not collect the required minimum chart number of samples that are representative of its drinking water.	X	
Ensure that systems on reduced monitoring collect from sites that are representative of those used during standard monitoring and, where appropriate, specify where these samples should be collected. Maintain records of system requirements.	X	

LCRMR Provision	Until the State receives primacy for the LCRMR, implementation for the following provisions will be the responsibility of:	
	State	EPA
Ensure that systems on reduced monitoring notify the State in writing no later than 60 days after a change in treatment or the addition of a new source. If necessary, specify additional steps that are needed to ensure optimal CCT is maintained and maintain records of system requirements.	X	
§141.90(f) Revisions to Public Education Requirements		
Ensure systems report compliance with their public education requirements within 10 days after the period in which these tasks were required. Maintain records of system requirements.	X	
§142.15(c)(4) State Reporting Requirements		
Report in accordance with new requirements: All 90th percentile lead levels for large and medium systems. Done milestone. Deem milestone.	X	

The State agrees to complete the following milestone activities relative to the LCRMR by the target dates indicated:

Milestone	Target Date
Draft State rule	Completed: Posted on the Internet
Submit draft rule to EPA, Region 5, for review	Completed: E-mailed draft primacy package to Jennifer Crooks, EPA, Region 5, on December 26, 2001
Conduct a public hearing	Conducted on February 7, 2002
Submit final rule for State Certification	May 1, 2002
Final rule promulgated by the State	August 1, 2002
Submit to EPA, Region 5, a complete and final primacy application including a determination from the Michigan Attorney General of the enforceability of the MDEQ regulatory language to enforce EPA's interpretation that a "site" is a "faucet," as requested by EPA, Region 5, in their letter to James K. Cleland, DWRPD, dated July 2, 2001.	January 12, 2004

This agreement will take effect upon the date of the last signature.

Russell J. Harding
Director
Michigan Department of Environmental Quality

3/1/02
Date

Thomas V. Skinner
Regional Administrator
United States Environmental Protection Agency, Region 5

3/14/02
Date